

File #: 2018-169

Owner's Name: Longstock II, LLC

Applicant: Smith / Hawks, PL

Agent: Bart Smith

Type of Application: LDC Text Amendment

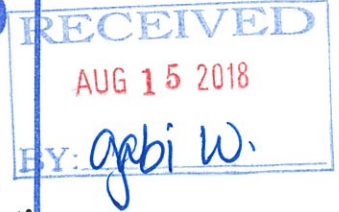
MONROE COUNTY, FLORIDA
PLANNING AND ENVIRONMENTAL RESOURCES DEPARTMENT



RECEIVED

AUG 16 2018
2018-169

MONROE CO. PLANNING DEPT.



Land Development Code (LDC) Text Amendment Application

An application must be deemed complete and in compliance with the Monroe County Comprehensive Plan and Code by the staff prior to the item being scheduled for review

Application Fee: \$5,950.00

The base fee includes two internal staff meetings with applicants; one Development Review Committee meeting, one Planning Commission public hearing; and one Board of County Commission public hearing. If this minimum number of meetings/hearings is exceeded, additional fees shall be charged pursuant to Fee Schedule Resolution and paid prior to the private application proceeding through public hearings.

In addition to the application fee, the following fees also apply:

Advertising Costs: \$245.00

Surrounding Property Owner Notification (SPON): \$3.00 for each property owner required to be noticed

Transportation Study Review: \$5,000.00 Deposit (any unused funds will be returned upon approval)

Advertising and Noticing fees for a community meeting: \$245.00 plus \$3.00/SPON

Date of Request: 08 / 16 / 2018
 Month Day Year

Applicant / Agent Authorized to Act for Property Owner: (Agents must provide notarized authorization from all property owners.)

Smith / Hawks, PL

Barton W. Smith, Esq.

Applicant (Name of Person, Business or Organization)

Name of Person Submitting this Application

138 Simonton Street, Key West, Florida 33040

Mailing Address (Street, City, State and Zip Code)

305-296-7227

bart@smithhawks.com

Work Phone

Home Phone

Cell Phone

Email Address

Property Owner: (Business/Corp must include documents showing who has legal authority to sign.)

Longstock II, LLC

Applicant

(Name/Entity)

Contact Person

7005 Shrimp Road, Unit 4, Stock Island, Florida 33040

Mailing Address (Street, City, State and Zip Code)

Applicant

Applicant

Work Phone

Home Phone

Cell Phone

Email Address

Section(s) of Land Development Code Affected :
Section 130-140

Please describe the reason for the proposed text amendment (attach additional sheets if necessary):
See attached letter explaining amendment

Please describe how the proposed amendment implements and is consistent with the Comprehensive Plan:

See attached letter explaining amendment's consistency with Comp. Plan

Please describe how proposed amendment is consistent with the Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7), Florida Statute:

See attached letter explaining amendment's consistency with Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7)

The Board of County Commissioners may consider an amendment if the change is based on one or more of the following factors. Please describe how one or more of the following factors shall be met (attach additional sheets if necessary):

- 1) Changed projections (e.g. regarding public service needs) from those on which the text was based**
See attached letter

- 2) Changed assumptions (e.g. regarding demographic trends):**
See attached letter

- 3) Data errors, including errors in mapping, vegetative types and natural features:**
See attached letter

- 4) New issues:**
See attached letter

- 5) Recognition of a need for additional detail or comprehensiveness:**
See attached letter

6) Data updates:

See attached letter

In no event shall an amendment be approved which will result in an adverse community change of the planning area in which the proposed development is located or to any area in accordance with a Livable CommuniKeys master plan. Please describe how the text amendment would not result in an adverse community change (attach additional sheets if necessary):

See attached letter

* * * * *

Applicants submitting an application for an amendment to the text of the Land Development Code shall participate in a concept meeting with the Planning and Environmental Resources Department, as indicated in Section 102-158(d)(3), to discuss the proposed amendment.

Scheduling. A concept meeting shall be scheduled by department staff once the application is determined to be complete.

As part of this concept meeting, department staff will identify whether or not the proposed text amendment will have a county-wide impact. If the proposal is determined to have a county-wide impact, a public meeting with the Board of County Commissioners ("**Impact Meeting**") prior to the application proceeding to the DRC for review is required. The applicant shall coordinate with the Planning Director regarding the date and time of the Impact Meeting; however, all Impact Meetings shall be held in Marathon.

Notice of Meeting. The Impact Meeting shall be noticed at least 15 days prior to the meeting date by advertisement in a Monroe County newspaper of general circulation.

Noticing and Advertising Costs. The applicant shall pay the cost of the public notice and advertising for the Impact Meeting and provide proof of proper notice to the Planning Director.

The Impact Meeting is not to be a public hearing (the BOCC will not vote on the proposal), but a public meeting during which the BOCC may offer their initial opinions and the public may have input on the proposed amendment.

PROOF OF PROPER NOTICING ON THE IMPACT MEETING WILL BE REQUIRED.

Applicants requesting a Land Development Code Text Amendment shall provide for public participation through a community meeting.

Scheduling. The applicant will coordinate with the Planning Director regarding the date, time and location of the proposed community meeting; however, all meetings are to be held on a weekday evening at least three (3) months prior to any of the public hearings.

Notice of Meeting. The community meeting shall be noticed at least 15 days prior to the meeting date by advertisement in a Monroe County newspaper of general circulation, mailing of notice to surrounding property owners, and posting of the subject property.

Noticing and Advertising Costs. The applicant shall pay the cost of the public notice and advertising for the community meeting and provide proof of proper notice to the Planning Director.

The community meeting shall be facilitated by a representative from the Monroe County Planning & Environmental Resources Department and the applicant shall be present at the meeting.

PROOF OF PROPER NOTICING ON THE COMMUNITY MEETING WILL BE REQUIRED.

* * * * *

All of the following must be submitted in order to have a complete application submittal:
(Please check as you attach each required item to the application)

- ☒ Completed application form (unaltered and unbound)
- ☒ Correct fee (check or money order payable to *Monroe County Planning & Environmental Resources*)
- ☒ Existing text of Land Development Code section(s) affected
- ☒ Proposed amendment(s) to text of Land Development Code section(s). *Must be provided in strikethrough and underline format.*
- ☐ If a site specific amendment is proposed:
 - ☐ Proof of ownership (i.e., Warranty Deed)
 - ☐ Ownership Disclosure Form
 - ☐ Current Property Record Card(s) from the Monroe County Property Appraiser
 - ☐ Location map
 - ☐ Photograph(s) of site(s) from adjacent roadway(s)
 - ☐ Signed and Sealed Boundary Survey(s), prepared by a Florida registered surveyor – eight (8) sets (at a minimum, survey should include elevations; location and dimensions of all existing structures, paved areas and utility structures; all bodies of water on the site and adjacent to the site; total acreage by land use district; total acreage by habitat; and total upland area)
 - ☐ Typed name and address mailing labels of all property owners within a 600 foot radius of the property(s) – (three sets). This list should be compiled from the current tax rolls of the Monroe County Property Appraiser. In the event that a condominium development is within the 600 foot radius, each unit owner must be included

If applicable, the following must be submitted in order to have a complete application submittal:

- ☒ **Notarized Agent Authorization Letter** (note: authorization is needed from all owner(s) of the subject property)
- ☒ **Proof of Ownership & Ownership Disclosure Form** (*required if application affects specific and defined area*)
- ☐ **Sealed Boundary Survey**, prepared by a Florida registered surveyor – eight (8) sets (*required if application affects specific and defined area*)
- ☒ **Location map** (*required if application affects specific and defined area*)
- ☒ **Copy of current Future Land Use Map** (*required if application affects specific and defined area*)
- ☒ **Typed name and address mailing labels** of all property owners within a 600 foot radius of the property(s) – (three sets). This list should be compiled from the current tax rolls of the Monroe County Property Appraiser. In the event that a condominium development is within the 600 foot radius, each unit owner must be included (*required if application affects specific and defined area*)
- ☒ **600ft Radius report**, prepared by the Monroe County Property Appraiser's Office (*required if application affects specific and defined area*)
- ☒ **Traffic Study**, prepared by a licensed traffic engineer (*required if application affects specific and defined area*)
- ☒ **Transportation fee** of \$5,000 to cover the cost of experts hired by the Department to review the traffic study – any unused funds deposited will be returned upon approval (*required if application affects specific and defined area*)

If deemed necessary to complete a full review of the application, within reason, the Planning & Environmental Resources Department reserves the right to request additional information.

Additional fees may apply pursuant to the approved fee schedule.

* * * * *

Has a previous application been submitted for this site(s) within the past two years? ☐ Yes ☒ No

Is there a pending code enforcement proceeding involving all or a portion of the parcel(s) proposed for development? ☐ Yes ☒ No Code Case file # _____ Describe the enforcement proceedings and if this application is being submitted to correct the violation: _____

The applicant/owner hereby acknowledges and agrees that any staff discussions or negotiations about conditions of approval are preliminary only, and are not final, nor are they the specific conditions or demands required to gain approval of the application, unless the conditions or demands are actually included in writing in the final development order or the final denial determination or order.

By signing this application, the owner of the subject property authorizes the Monroe County Planning & Environmental Resources staff to conduct all necessary site visits and inspections on the subject property.

I, the Applicant, certify that I am familiar with the information contained in this application, and that to the best of my knowledge such information is true, complete and accurate.

Signature of Applicant: _____

Date: 8/15/18

STATE OF Florida

COUNTY OF Monroe

Sworn to and subscribed before me this 15 day of August, 2018.

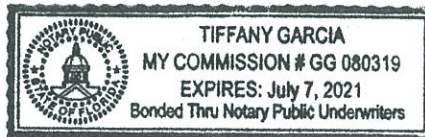
by Barton Smith, who is personally known to me OR
produced

(PRINT NAME OF PERSON MAKING STATEMENT)

_____ as identification.
(TYPE OF ID PRODUCED)

Tiffany Garcia
Signature of Notary Public

Tiffany Garcia
Print, Type or Stamp Commissioned Name of Notary Public
My commission expires:



Send complete application package to:

Monroe County Planning & Environmental Resources Department
Marathon Government Center
2798 Overseas Highway, Suite 400
Marathon, FL 33050

SMITH/HAWKS

ATTORNEYS AT LAW

August 16, 2018

Via Overnight Delivery

Emily Schemper
Senior Director
Monroe County Planning & Environmental Resources Department
2798 Overseas Highway, Suite 400
Marathon, FL 33050

RE: Proposed Text Amendment to provide text for Section 130-140 of the Monroe County Land Development Regulations

Dear Emily,

Please allow this letter to serve as additional information in support of the enclosed Land Development Regulation Text Amendment Application (“**Application**”) made on behalf of Longstock II, LLC, a Florida limited liability company (“**Applicant**”).

Text Amendment Background

The Text Amendment provides text for Section 130-140 of the Monroe County Land Development Regulations (“**Code**”) which has been reserved for the Safe Harbor Community Center (“**SHCC**”) Overlay District, and the Applicant believes this Text Amendment is appropriate and timely because the SHCC is an area poised for future development and in need of a specific overlay suitable to the particular needs and unique characteristics of the SHCC consistent with the policies of the Monroe County Year 2030 Comprehensive Plan and the Stock Island and Key Haven Livable CommuniKeys Plan.

Text Amendment Request

The proposed text amendment (“**Amendment**”) seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the SHCC of hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC.

The Proposed Amendment

Sec. 130-140. Safe Harbor Community Center Overlay District.

- (a) Purpose and intent. The purpose of the Safe Harbor Community Center Overlay District is to implement applicable goals, objectives, and policies of the Comprehensive Plan promoting a working waterfront and public access to the marine and coastal waters and allowing for redevelopment in a non-environmentally sensitive area of the Lower Keys for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses, and preserving and protecting coastal and natural resources and the community character. The intent is to protect and maintain the character of the Safe Harbor area while allowing redevelopment/infill within the overlay district, an area that is the result of dredge and fill which has been developed with nonresidential uses.
- (b) Boundary. The Safe Harbor Community Center Overlay District shall be shown as an overlay district on the Official Land Use District Map. The Safe Harbor Community Center Overlay District shall be comprised of that certain area bounded by Front Street to the east, Fourth Avenue to the north, Fifth Avenue to the north, Shrimp Road to the west, and Shrimp Road to the south but excluding that certain property owned by the Utility Board of the City of Key West and Florida Keys Aqueduct Authority bounded by Front Street to the east.
- (c) Pursuant to Monroe County Comprehensive Plan Policy 101.5.6, the limitation of 5,000 square feet of floor area for commercial retail, restaurant uses, or any combination thereof shall apply to parcels as they existed as of the date of adoption of the Land Development Regulations in 1986 and as identified in the Monroe County Land Use Map dated January 19, 1988 attached hereto as Exhibit "A".
- (d) NROGO allocations or transfers over 10,000 square feet shall be permitted into the Safe Harbor Community Center Overlay District.
- (e) Within the boundaries of the Safe Harbor Community Center Overlay District, the permitted and conditional uses in subsections (1)(b) and (c) shall be enforced, in lieu of Section 130-85, Maritime Industries, and Section 130-88, Mixed Use; the maximum hotel/motel density in subsection (2) shall be enforced in lieu of Section 130-157; and the nonresidential land use intensities in subsection (3) shall be enforced in lieu of Section 130-164, maximum nonresidential land use intensities and district open space.
 - (1) Permitted uses. Safe Harbor Community Center Overlay District Permitted Uses
 - a. The following uses are permitted as of right in the Safe Harbor Community Center Overlay District:
 - 1. Light industrial uses;

2. Commercial retail, restaurant uses, or any combination thereof, of less than 5,000 square feet of floor area;
 3. Institutional residential uses, involving less than ten dwelling units or rooms;
 4. Office uses of less than 5,000 square feet of floor area;
 5. Heavy industrial uses;
 6. Detached dwellings;
 7. Commercial apartments involving less than six dwelling units, but tourist housing uses, vacation rental use, or commercial apartments is prohibited.
 8. Attached and detached dwellings involving less than six units, designated as employee housing as provided for in Section 139-1;
 9. Commercial fishing;
 10. Institutional uses;
 11. Public buildings and uses;
 12. Replacement of an existing antenna-supporting structure pursuant to Section 146-5(b);
 13. Collocations on existing antenna-supporting structures, pursuant to Section 146-5(c);
 14. Attached wireless communications facilities, as accessory uses, pursuant to section 146-5(d);
 15. Stealth wireless communications facilities, as accessory uses, pursuant to section 146-5(e); and
 16. Satellite earth stations, as accessory uses, pursuant to section 146-5(f);
 17. Wastewater nutrient reduction cluster systems that serve less than ten residences.
- b. The following uses are permitted as minor conditional uses in the Safe Harbor Community Center Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:
1. Commercial apartments involving more than six dwelling units, provided that:
 - a. The hours of operation of the commercial uses proposed in conjunction with the apartments are compatible with residential uses;
 - b. Access to U.S. 1 is by way of:
 1. An existing curb cut;
 2. A signalized intersection; or
 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 - c. Tourist housing uses, including vacation rental use of commercial apartments is prohibited;
 2. Hotels of fewer than 50 rooms, provided that one or more of the following amenities is available to guests:
 1. Swimming pool;

2. Marina; or
3. Tennis courts;
3. New antenna-supporting structures, pursuant to Section 146-5(a).
4. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
5. Commercial retail, office, restaurant uses, or any combination thereof, of high intensity, and of less than 5,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
6. Commercial apartments involving six to 18 dwelling units, provided that:
 - a. The hours of operation of the commercial uses are compatible with residential uses;
 - b. Access to U.S. 1 is by way of:
 1. An existing curb cut;
 2. A signalized intersection; or
 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 - c. Tourist housing uses, including vacation rental uses, of commercial apartments are prohibited;
7. Attached and detached dwellings involving six to 18 units, designated as employee housing as provided for in Section 139-1.
- c. The following uses are permitted as major conditional uses in the Safe Harbor Community Center Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:

1. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, of greater than 10,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
2. Hotels providing 50 or more rooms, provided that:
 - a. The hotel has restaurant facilities on the premises; and
 - b. One or more of the following amenities is available to guests:
 1. Swimming pool; or
 2. Docking facilities; or
 3. Tennis courts; and
 - c. Access to U.S. 1 is by way of:
 1. An existing curb cut;
 2. A signalized intersection; or
 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
3. Marinas, provided that:
 - a. The parcel proposed for development has access to water at least four feet below mean sea level at mean low tide;
 - b. The sale of goods and services is limited to fuel, food, boating, diving and sport fishing products;
 - c. All outside storage areas are screened from adjacent uses by a solid fence, wall, or hedge at least six feet in height; and
 - d. Each nonwaterside perimeter setback of the parcel proposed for development must have a class C bufferyard within a side yard setback of no less than ten feet;
4. Wastewater treatment facilities and wastewater treatment collection systems serving uses located in any land use district, provided that:
 - a. The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;
 - b. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally

- consistent with the character of the surrounding community and minimize the impact of any outdoor storage, temporary or permanent; and
- c. In addition to any district boundary buffers set forth in Chapter 114, Article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
1. One native canopy tree for every 25 linear feet of screening structure;
 2. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 3. The planting bed shall be installed as set forth in Chapter 114, Article IV; and
 4. A solid fence may be required upon determination by the planning director.
5. Heliports or seaplane ports, provided that:
- a. The heliport is associated with a governmental service facility, a law enforcement element or a medical services facility;
 - b. The heliport or seaplane port is a Federal Aviation Administration certified landing facility;
 - c. The landing and departure approaches do not pass over established residential uses or known bird rookeries;
 - d. If there are established residential uses within 500 feet of the parcel proposed for development, the hours of operation for non-emergency aircraft shall be limited to daylight; and
 - e. The use is fenced or otherwise secured from entry by unauthorized persons;
6. Attached and detached dwelling units involving more than 18 units, designated as employee housing as provided for in Section 139-1.
- (2) Maximum Densities for Hotel/Motel and Minimum Open Space. For purposes of this overlay district, the hotel/motel maximum net density shall be 20 units per acre and minimum open space shall be 0.20.
- (3) Maximum nonresidential land use intensities and district open space. For the purposes of this overlay district, uses with corresponding intensity thresholds shall be cumulative and utilize the floor area ratios as follows:

Safe Harbor Community Center Overlay District Maximum Nonresidential Land Use Intensities and District Open Space:

Land Use	Maximum Floor Area Ratio	Minimum Open Space Ratio^(a)
Low Intensity Commercial Retail or Restaurant	0.40	0.20

Medium Intensity Commercial Retail or Restaurant	0.30	0.20
High Intensity Commercial Retail or Restaurant	0.30	0.20
Office	0.50	0.20
Commercial Fishing	0.45	0.20
Light Industrial	0.60 ^(b)	0.20
Heavy Industrial	0.40	0.20
Institutional	0.30	0.20
Public Building/Uses	0.60	0.20
Agriculture (Mariculture)	0.45	0.20
Commercial Recreation	0.25	0.20
<p>(a) Additional open space requirements may apply based on environmental protection criteria – see additional open space ratios in Chapter 118. In accordance with Section 101-2(1), the most restrictive of these ratios applies.</p> <p>(b) For properties within the Safe Harbor Community Center Overlay District with Light Industrial land use, the maximum floor-area ratio shall be 0.60 in accordance with Policy 101.5.25 of the Comprehensive Plan.</p> <p>(c) Enclosed and partially enclosed boat barns shall not count towards Floor Area Ratio within the Safe Harbor Community Center Overlay District.</p>		

(f) Parking.

- (1) Required number of off-street parking spaces. The following number of parking spaces shall be provided for each use:

Specific Use Category	Minimum Required Number of Parking Spaces Per Indicated Unit of Measure
Single-family dwelling units, including mobile homes on individual lots or parcels	2.0 spaces per dwelling unit or mobile home
Multifamily residential developments	1.5 spaces per dwelling unit
Commercial retail except as otherwise specified in this table	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building and 1.5 spaces per 1,000 sq. ft. of area devoted to outdoor retail sales
Eating and drinking establishments, such as restaurants and bars	For areas devoted to food/beverage service, 1.0 space per 3 seats or 3.0 spaces per 1,000 sq. ft. of nonresidential floor area, whichever total amount is higher. For other areas, 3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building separate from the seating area and devoted to activities other than food/beverage service (including, but not limited to,

	kitchen, office, retail sales not related to food or beverage and storage)
Commercial recreation (indoor), excluding theaters, conference centers and activity centers	5.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Commercial recreation (outdoor)	5.0 spaces per 1,000 sq. ft. of the parcel that is directly devoted to the outdoor recreational activity, excluding areas used for parking and driveways, required yards and required landscaping and buffer areas
Theaters, conference centers, or activity centers	1.0 space per 3.0 actual seats or based on seating capacity
Offices	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Hotels/destination resorts	1.0 space per each 1-bedroom transient dwelling unit and 1.0 space plus 0.5 space for each additional bedroom per each 2 or more bedroom transient dwelling unit
Industrial uses; excluding mini-warehouses/self-storage centers; repair or servicing of vehicles; and warehousing	2.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building; and 1.0 space per 1,000 sq. ft. of the parcel that is devoted to outdoor industrial use
Live-aboard	1.0 space per berth
Marinas and commercial fishing facilities	1.0 space per 4 berths plus 1.0 space per 8 dry storage racks
Charter/guide boats, six or fewer passenger capacity	1.0 space per berth
Party and charter/guide boats, more than six passengers capacity	0.3 space per passenger capacity of vessel
Boat ramps	6.0 spaces per ramp; all spaces shall be a minimum of 14 feet by 55 feet, to accommodate trailers and oversized vehicles

(2) Off-site parking facilities. The following requirements shall apply to off-site parking facilities for nonresidential uses.

1. Off-site parking facilities shall be permitted and located within the Safe Harbor Community Center Overlay District.
2. A parking agreement shall be required in accordance with Section 114-68.

(g) Setback. The front setback for each parcel within the Safe Harbor Community Center Overlay District shall be reduced to 10 feet for a more urban look in the Safe Harbor Community Center Overlay District.

- (h) Signage. For purposes of signage in the Safe Harbor Community Center Overlay District, the number of parcels as set forth in the Monroe County, Florida Land Use District Map adopted by the Monroe County Board of Commissioners by Resolution on January 19, 1988 shall be used to determine the maximum amount of signage for a particular parcel. For example, if a particular parcel consisted of 5 parcels as set forth in the Land Use District Map adopted on January 19, 1988, then the maximum amount of signage for that particular parcel shall be determined as if that parcel consisted of 5 parcels.

Reason for Proposed Text Amendment

The Monroe County Year 2030 Comprehensive Plan provides for the Livable CommuniKeys Master Plan which in turn provides for the Master Plan for the Future Development of Stock Island & Key Haven, which provides for the establishment of the Safe Harbor Community Center Overlay District which is the basis of this Amendment.

Text Amendment Request

The Amendment seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the SHCC for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC.

Policy 101.5.6

Although Section 130-140(f)(1)(b)(4) of the Amendment above permits commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area as a minor conditional use, this does not contradict Policy 101.5.6 of the Monroe County Comprehensive Plan, which provides that parcels within the Maritime Industries zoning district shall be limited to uses of less than 5,000 square feet of floor area. The specified permitted minor conditional use can only occur by consolidation of parcels as set forth above in Section 130-140(c) of the Amendment.

Parking

The parking calculations provided are based on: (1) historical parking utilization data in the SHCC; (2) the requirements of the City of Key West Land Development Regulations which contain similar parking demands for liveaboards and wet slips in urban areas; (3) as well as 15 years of data evidencing that dry slips are utilized half the time wet slips are utilized and generate approximately half the parking demand. Because of Safe Harbor's proximity to Key West, alternative modes of transportation, including bicycles and scooters, are utilized for transportation. A parking study has been submitted along with this amendment supporting the adjustments to parking contained in the Amendment.

Setback

The SHCC Overlay District will reduce the required front setback for each parcel within the SHCC Overlay District to 10 feet which will allow for a more accessible and inviting atmosphere for the buildings in the SHCC Overlay District. Moreover, this will pull buildings away from the harbor freeing up space along the harbor for a harbor boardwalk.

Signage

The SHCC Overlay District will solve the problem regarding the need for signage variances for large parcels such as the Perry Hotel, which formerly consisted of multiple smaller parcels. This is achieved by utilizing the number of parcels as per the Land Use District Map adopted by the Monroe County Board of Commissioners by Resolution on January 19, 1988.

Military Installation Area of Impact

The Safe Harbor Community Center Overlay District is located in a noise zone of less than 65 DNL (Day-Night Average Sound level) noise contour pursuant to the 2013 Aircraft Noise Study for Naval Air Station Key West, and the Safe Harbor Community Center Overlay District is compatible with the Military Installation Area of Impact (MIAI).

Density

Prior to 2017, the Land Development Code open space density was zero (0) in Maritime Industries. The Safe Harbor Community Center District Overlay provides for development at this prior level, but accounts for open space, requiring a portion of the property to be open but still allowing the same maximum net density as was provided in the land development code until its 2017 amendment.

Boat Barns/Racks

This Amendment will allow development of boat racks which are covered and enclosed (provided the same are not associated with retail sales of boats), rather than just covered, unenclosed boat racks, without requiring NROGO square footage.

The Amendment eliminates an artificial distinction with no significance to the NROGO scheme. There is no functional or operational difference between covered, unenclosed or enclosed on three sides boat racks and covered, enclosed boat racks. However, under the current Code, a developer must obtain NROGO allocations and/or exemptions to construct an enclosed boat storage building but can build a non-enclosed (three-sided) boat storage building without the necessity of obtaining NROGO. This incentivizes development and continued use of unenclosed boat storage and discourages development and use of enclosed boat storage which is more secure from a security perspective and less susceptible to damage in a wind event such as a hurricane.

Simple physics dictates that a one, two, or three-sided building has an increased risk of sustaining damage in a wind event as opposed to a four-sided, enclosed building. Because of the lack of

enclosure, wind blowing into the unenclosed structure can create a “sail” effect, stressing the structural components of the building. An enclosed building presents no such opportunity. From a practical perspective, designs of enclosed boat storage buildings which are rated for hurricane-force winds are readily available, whereas three-and-fewer sided buildings are not typically designed to withstand high-intensity winds.

There is no public policy justification for the current disparate treatment of enclosed and unenclosed boat racks. Both enclosed and unenclosed boat racks are “constructed, installed or portable, the use of which requires a location on a parcel of land,” and as such meet the Code definition of “structure.”

Figure 1, below, depicts an elevation and an aerial of an enclosed, four-sided structure intended for boat dry rack storage. Construction of this structure requires NROGO:

Figure 1:

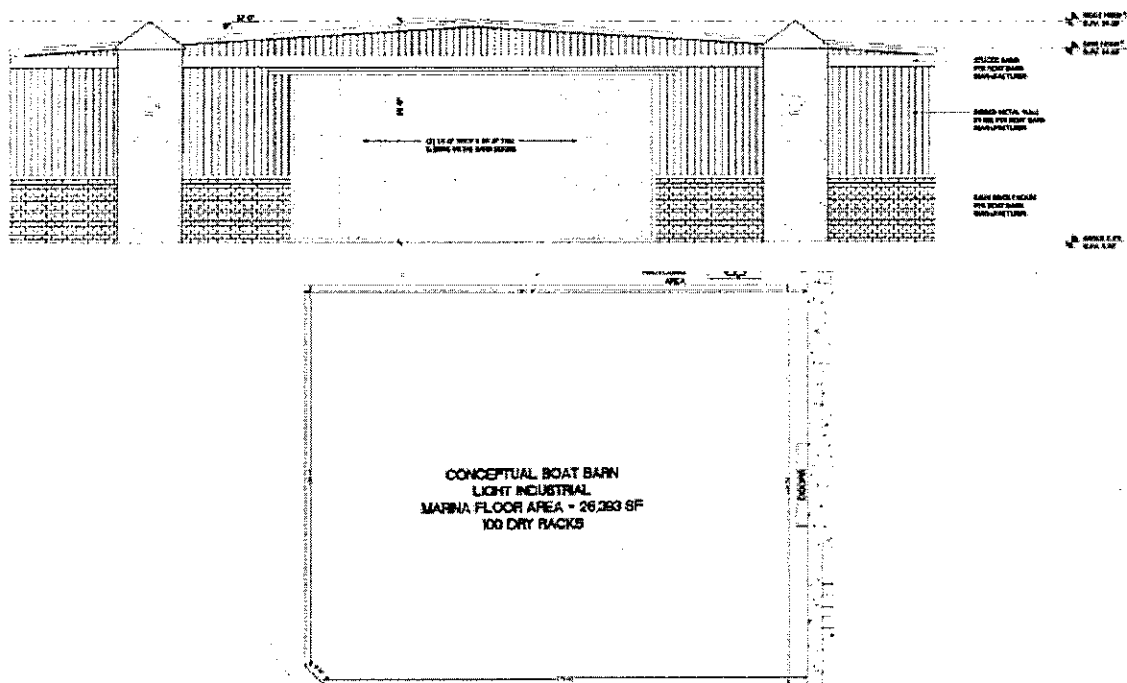
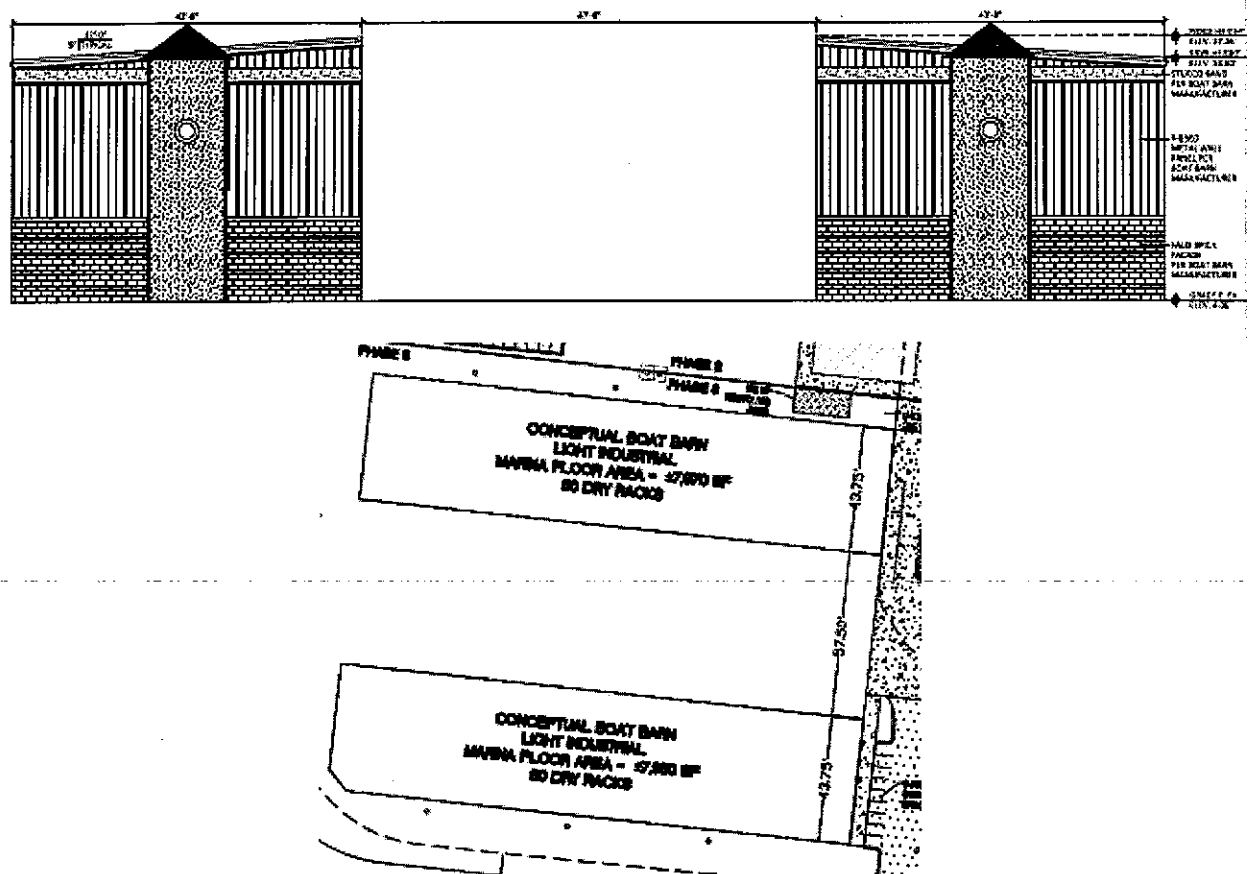


Figure 2, below, depicts an elevation and an aerial of the same structure “cut” in half, creating two three-sided unenclosed structures. Construction of these structures for boat storage use unrelated to retail sales does not require NROGO:

Figure 2:



The above Figures illustrate the absurdity of the current Code and the practical need for the Amendment. The Amendment will not change the function of the Code in any way but will allow developers and port operators to more easily and economically meet Florida Building Code requirements for boat rack structures, while decreasing the risk to boats stored inside as addressed herein.

Consistency with the Monroe County Year 2030 Comprehensive Plan, the Florida Statutes, and Principles for Guiding Development

- A. The Proposed Amendment implements and is consistent with the following Goals, Objectives and Policies of the Monroe County Year 2030 Comprehensive Plan. Specifically, the amendment furthers:**

Objective 101.4: Monroe County shall regulate nonresidential development to maintain a balance of land uses to serve the needs of the future population of Monroe County.

Policy 101.4.5 The NROGO allocation system shall not apply to the following nonresidential developments:

5. Industrial uses in the Maritime Industries (MI) and the Industrial (I) land use (zoning) districts.

12. Recreational and commercial working waterfront uses, as defined by §342.07, F.S., excluding transient uses. These exemptions shall not be available on lands designated as Tier I or, if clearing is proposed, designated as Tier III-A (SPA).

GOAL 217: The coastal area of Monroe County shall be managed to promote public access to the marine and coastal waters, to balance the protection of recreational and commercial working waterfront and commercial fishing uses and the preservation and protection of coastal and natural resources and the community character. [§163.3178(2)(g), F.S.]

Policy 217.1.1: The strategy to preserve and protect commercial fishing and recreational and commercial working waterfront uses shall include the following:

1. Exemptions from the requirements of the Permit Allocation System for new nonresidential development, pursuant to Policy 101.4.5;

GOAL 502: All existing and future residents and visitors of Monroe County shall be served with ports¹ in a manner that maximizes safety, convenience, economic benefit, environmental compatibility and consistency with other elements of the comprehensive plan.

Objective 502.1: Because of the Florida Keys' unique nature as an archipelago, Monroe County shall promote the preservation and enhancement of the existing ports and port related activities.

Policy 101.5.6: The principal purpose of the Mixed Use/Commercial (MC) future land use category is to provide for the establishment of mixed use commercial land use (zoning) districts where various types of commercial retail and office may be permitted at intensities which are consistent with the community character and the natural environment. Employee housing and commercial apartments are also permitted. In addition, Mixed Use/Commercial land use districts are to establish and conserve areas of mixed uses, which may include maritime industry, light industrial uses, commercial fishing, transient and permanent residential, institutional, public, and commercial retail uses.

This future land use category is also intended to allow for the establishment of mixed use development patterns, where appropriate. Various types of residential and nonresidential uses may be permitted; however, heavy industrial uses and similarly incompatible uses shall be prohibited. The County shall continue to take a proactive role in encouraging the preservation and enhancement of community character and recreational and commercial working waterfronts.

¹ "Port" is defined in the Comprehensive Plan as "a place alongside navigable water with facilities for the loading and unloading of vessels and cargo." Private marinas meet this definition.

Policy 101.5.22: The principal purpose of the Community Center (CC) overlay is to identify a defined geographic developmental focus area according to each of the adopted Livable CommuniKeys Community Master Plans. The intent of this overlay is to implement the action items identified in the Livable CommuniKeys Community Master Plans, pursuant to Policy 101.19.2. Within three years of the adoption of the 2030 Comprehensive Plan, Monroe County shall adopt the Community Center overlays as identified by the Livable CommuniKeys Community Master Plans included in Policy 101.19.2 on the Future Land Use Map. Maximum permitted densities and intensities shall be in accordance with the underlying land use categories.

GOAL 601: Monroe County shall adopt programs and policies to facilitate access by residents to adequate and affordable housing that is safe, decent, and structurally sound, and that meets the needs of the population based on type, tenure characteristics, unit size and individual preferences.

B. The Proposed Amendment implements and is consistent with the following Goals, Strategies and Action Items of the Livable CommuniKeys Program for Stock Island and Key Haven. Specifically, the amendment furthers:

Action Item 1.1.2: Amend the parking requirements in the overlay district by offering a parking credit for on-street parking spaces located directly in front of the development being served.

Action Item 1.1.3: Amend the floor area ratios in the overlay district for commercial retail and industrial uses.

Action Item 1.1.5: Create an overlay district to resolve issues with non-conforming structures and uses in the MU and MI land use districts.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density.

Strategy 1.2 Create a “downtown” district.

Action Item 1.2.1: Identify Safe Harbor as a focal point of the “downtown” district. As part of this designation, analyze the appropriate boundaries for the “downtown” district and propose revisions to the Land Development Regulations.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density

Goal One: Provide space for a working waterfront and its supporting industries.

Goal Two: Preserve commercial fishing.

Goal Three: Enhance the area's identity as a water-oriented, commercial fishing community.

Goal Four: Revitalize the port area while improving its physical setting and appearance.

Goal Five: Promote opportunities for the diversification of the local water-dependent economy.

Goal Six: Provide and improve waterfront access.

Goal Seven: Create an efficient, visually attractive network of intra-island corridors.

C. The Proposed Amendment is consistent with Florida Statutes

There are no provisions of the Florida Statutes inconsistent with the proposed Amendment.

D. The amendment is consistent with the Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7), Florida Statutes. The Proposed Amendment specifically furthers the following Principles (Bolded):

For the purposes of reviewing the consistency of the adopted plan, or any amendments to that plan, with the principles for guiding development, and any amendments to the principles, the principles shall be construed as a whole and specific provisions may not be construed or applied in isolation from the other provisions.

(a) Strengthening local government capabilities for managing land use and development so that local government is able to achieve these objectives without continuing the area of critical state concern designation.

(b) Protecting shoreline and marine resources, including mangroves, coral reef formations, seagrass beds, wetlands, fish and wildlife, and their habitat.

(c) Protecting upland resources, tropical biological communities, freshwater wetlands, native tropical vegetation (for example, hardwood hammocks and pinelands), dune ridges and beaches, wildlife, and their habitat.

(d) Ensuring the maximum well-being of the Florida Keys and its citizens through sound economic development.

(e) Limiting the adverse impacts of development on the quality of water throughout the Florida Keys.

(f) Enhancing natural scenic resources, promoting the aesthetic benefits of the natural environment, and ensuring that development is compatible with the unique historic character of the Florida Keys.

(g) Protecting the historical heritage of the Florida Keys.

(h) Protecting the value, efficiency, cost-effectiveness, and amortized life of existing and proposed major public investments, including:

1. The Florida Keys Aqueduct and water supply facilities;
2. Sewage collection, treatment, and disposal facilities;
3. Solid waste treatment, collection, and disposal facilities;
4. Key West Naval Air Station and other military facilities;
5. Transportation facilities;
6. Federal parks, wildlife refuges, and marine sanctuaries;
7. State parks, recreation facilities, aquatic preserves, and other publicly owned properties;
8. City electric service and the Florida Keys Electric Co-op; and
9. Other utilities, as appropriate.

(i) Protecting and improving water quality by providing for the construction, operation, maintenance, and replacement of stormwater management facilities; central sewage collection; treatment and disposal facilities; and the installation and proper operation and maintenance of onsite sewage treatment and disposal systems.

(j) Ensuring the improvement of nearshore water quality by requiring the construction and operation of wastewater management facilities that meet the requirements of ss. 381.0065(4)(l) and 403.086(10), as applicable, and by directing growth to areas served by central wastewater treatment facilities through permit allocation systems.

(k) Limiting the adverse impacts of public investments on the environmental resources of the Florida Keys.

(l) Making available adequate affordable housing for all sectors of the population of the Florida Keys.

(m) Providing adequate alternatives for the protection of public safety and welfare in the event of a natural or manmade disaster and for a post disaster reconstruction plan.

(n) Protecting the public health, safety, and welfare of the citizens of the Florida Keys and maintaining the Florida Keys as a unique Florida resource.

Pursuant to Section 380.0552(7) Florida Statutes, the proposed amendment is consistent with the Principles for Guiding Development as a whole and is not inconsistent with any Principle.

Changed Projections, Assumptions and New Issues

The Board of County Commissioners may consider an amendment if the change is based on one or more factors, including changed projections (e.g. regarding public service needs) from those on which the text was based, changed assumptions (e.g. regarding demographic trends), data errors, new issues, or recognition of a need for additional detail or comprehensiveness.

The proposed Amendment is based on a need for additional detail or comprehensiveness, and the SHCC Overlay District provides a framework consistent with the Comprehensive Plan and as set forth in the Livable CommuniKeys Program for Stock Island and Key Haven.

Safe Harbor and Stock Island Marina Village

The construction of The Perry Hotel and Stock Island Marina Village have brought more tourists, visitors, and jobs to the area comprising the SHCC Overlay District. “A developing market has emerged due to Stock Island’s ability to provide world-class dockage amenities. Stock Island’s many attractive features include great restaurants, entertainment, art, and architecture, as well as beautiful golf courses, and the best year-round fishing in the U.S. There are many marinas surrounding Key West, but Stock Island Marina Village leads the industry in technology, infrastructure, and hospitality. The marina has more deepwater capacity than any other marina in the Keys, and is safely nestled within a safe harbor, providing shelter from excessive wind and seas, but maintains easy access to the open Atlantic. ... The marina — part of Stock Island’s Historic Seaport — opened its doors in the 1940s but has undergone complete redevelopment over the past four years, including the newly installed Bellingham concrete floating docks, new fuel system with 60,000 gallon capacity, 100-Room boutique style hotel, three on-site restaurants, and even more to come!” (<https://southernboating.com/destinations/us-atlantic/stock-island-marina-village-key-west-florida/>).

Ports such as the Safe Harbor Marina and Stock Island Marina Village are highly desirable destinations for boaters and fishermen from all over the world and are prime launching areas for sea travel from Florida to Cuba. “A ferry terminal for U.S.-Cuba travel, which has been a talking point for locals..., would require a marina such as Safe Harbor on Front Street or the Stock Island Marina Village on Shrimp Road, to be outfitted as an international port of entry.” *In the Shadow of Key West, Change Ahead for a Neighboring Island* (Miami Herald, August 16, 2015).

Bernstein Park

The area comprising the SHCC Overlay District is undergoing a massive amount of change, and the SHCC Overlay District is necessary to keep up with and address the changing landscape of the area. Monroe County is close to completion of the reconstruction of neighboring Bernstein Park,

at a cost of approximately \$8 million, adding 2 soccer fields, a basketball court, exercise trail, a playground, and updated field lights. *This Keys Island Is Changing Right Before Our Eyes* (Miami Herald, November 27, 2016).

Boat Barn

The current Code disparately treats enclosed, four-sided boat storage racks and unenclosed, three-or-fewer sided boat storage racks with no meaningful distinction. The operational, concurrency, and environmental impacts are identical for enclosed boat racks as for three-sided, unenclosed boat racks. The text of the Amendment is consistent with the Code which encourages more sound, attractive, and practical development of boat storage racks.

The proposed Amendment is based on changed projections as to the needs of the public. As Monroe County braces itself to deal with the increasingly-evident impacts of climate change, an approach which considers and encourages best practices for storm readiness and hardening is necessary.

According to the U.S. National Climate Assessment Report, "Climate Change Impacts" (the "**NCA Report**"), produced by an advisory committee chartered under the Federal Advisory Committee Act, for the Subcommittee on Global Change Research and at the request of the U.S. Government, "[t]here has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s...[citations omitted] These include measures of intensity, frequency, and duration as well as the number of strongest (category 4 and 5) storms." See NCA Report, P. 41. A copy of the NCA Report is attached hereto and incorporated herein as **Exhibit "B"**.

By providing for the SHCC Overlay District to accommodate enclosed boat rack structures, the Code will encourage storm-hardened and practical development of boat storage facilities. The recent wind-damage and water-damage impacts of Hurricane Irma and the projected increased intensity of Atlantic hurricanes mitigate for policies which encourage the protection of personal property (including boats) during storm events, and for investment by developers and port operators in infrastructure which provide peace of mind to visitors and tourists who may otherwise be wary to store boats in the Florida Keys for seasonal use as a result of hurricane impacts.

Furthermore, despite the best efforts of law enforcement, marine-related theft is on the rise in the Florida Keys. Pursuant to the June 21, 2017 Keynoter Article, "Marine Related Thefts on Rise Throughout the Florida Keys" (the "**Marine Theft Article**"), the theft of at least three (3) outboard engines, one (1) outboard lower unit, and three separate incidents of fishing gear theft from boats occurred over a ten-day span in June, 2017. A copy of the Marine Theft Article is attached hereto and incorporated herein as **Exhibit "C"**. One need only pick up a local newspaper any given week to find reports of the increased prevalence of marine-related theft.

The permissible development of enclosed boat racks allows developers and port operators to provide an additional option for boat storage which provides increased security to both tourist and resident boat users. It is axiomatic that an enclosed, locked boat storage structure reduces the risk of marine-related (engine and engine parts, fishing equipment, electronic equipment) theft as

compared to structures where boats are visible to the naked eye. While the Marine Theft Article provides simply that “[m]ost boat, motor, and fishing and diving equipment thefts can be easily prevented with minimum effort. At the end of the day, remove your gear from the boat and lock it up[,]” motors cannot be readily removed from boats and boats themselves are vulnerable to theft when stored anywhere other than enclosed storage under lock and key. The Amendment will encourage theft-deterrence in the marine sphere and allow port operators to more economically provide in-demand storage, explicitly furthering Goal 502 of the Comprehensive Plan that “[a]ll existing and future residents and visitors of Monroe County shall be served with ports in a manner that *maximizes safety, convenience, economic benefit*, environmental compatibility and consistency with other elements of the comprehensive plan.” (*emphasis added*).

No Adverse Community Change

There will be no adverse change to unincorporated Monroe County at large if the Amendment is approved. As discussed herein, there are no increased concurrency, environmental, or practical impacts associated with implementation of the SHCC Overlay District. All such development will be required to comply with level of service, concurrency, and performance standards as set forth in the Code. Moreover, it allows for infill at or near the primary employment center of Key West and Stock Island while keeping density outside the more rural lower Florida Keys.

Conclusion

Based on the foregoing, Applicant requests consideration and adoption of the Amendment. Thank you for your consideration and assistance, and please feel free to contact me with any questions.

Sincerely,

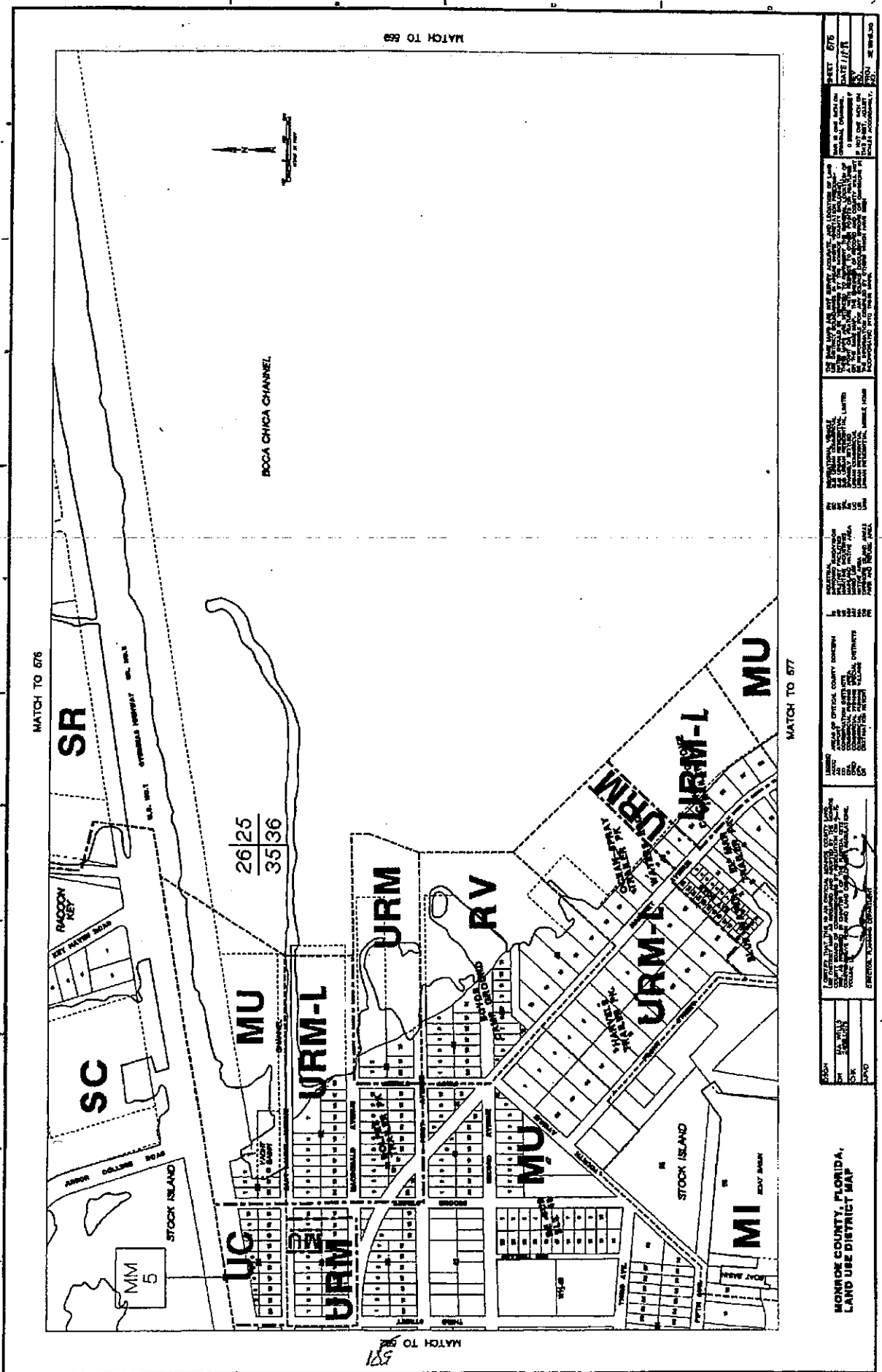
A handwritten signature in blue ink, appearing to read 'B. W. Smith', with a long horizontal flourish extending to the right.

Barton W. Smith, Esq.

Ms. Emily Schemper, Assistant Director
August 16, 2018
Page 20

Exhibit "A"

Monroe County Land Use Map Dated January 19, 1988



**MONROE COUNTY, FLORIDA,
LAND USE DISTRICT MAP**

DATE: 11/11/11
BY: [Signature]
CHECKED: [Signature]
APPROVED: [Signature]

LEGEND

SC SPECIAL COMMERCIAL
SR SPECIAL RESIDENTIAL
MU MEDIUM DENSITY RESIDENTIAL
URM URBAN RESIDENTIAL MEDIUM DENSITY
URM-L URBAN RESIDENTIAL MEDIUM DENSITY - LOW DENSITY
RV RECREATIONAL VEHICLE
UC URBAN COMMERCIAL
MI MEDIUM DENSITY RESIDENTIAL - MEDIUM DENSITY

NOTES

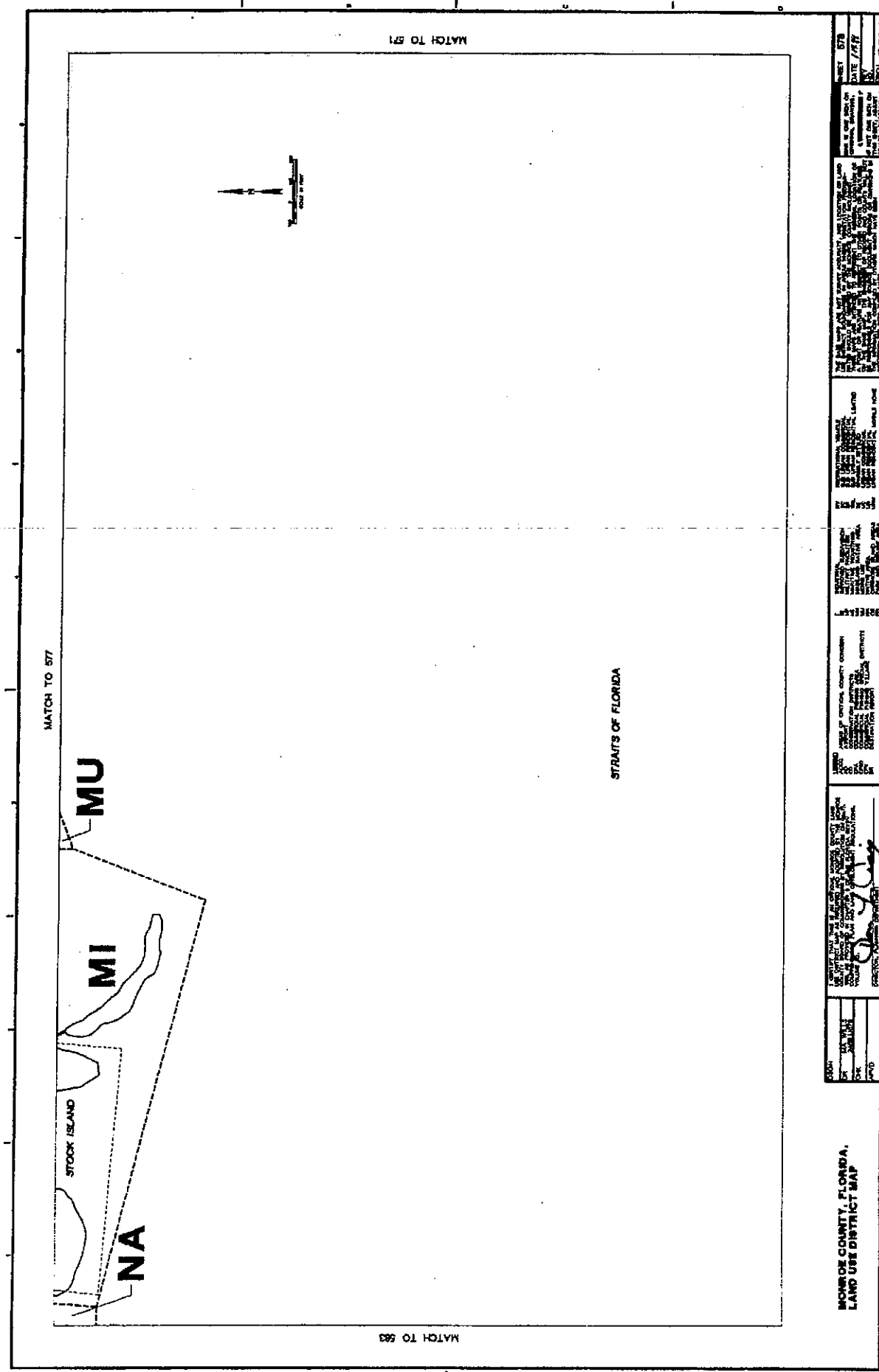
1. ALL LAND USE DISTRICTS ARE SUBJECT TO THE ZONING ORDINANCE OF MONROE COUNTY, FLORIDA.

2. THE ZONING ORDINANCE OF MONROE COUNTY, FLORIDA, IS THE AUTHORITY FOR THE LAND USE DISTRICT MAP.

3. THE LAND USE DISTRICT MAP IS A SUMMARY OF THE ZONING ORDINANCE OF MONROE COUNTY, FLORIDA.

REVISIONS

NO.	DATE	DESCRIPTION
1	11/11/11	INITIAL RELEASE



MONROE COUNTY, FLORIDA, LAND USE DISTRICT MAP

DATE: 7/1/77
 BY: [Signature]
 APPROVED: [Signature]
 TITLE: [Signature]
 PROJECT: [Signature]

U.S. GEOLOGICAL SURVEY
 WATER RESOURCES DIVISION
 ALBUQUERQUE, NEW MEXICO 87105

SCALE: 1" = 1 MILE
 1:50,000

LEGEND:
 MARINE USE
 MARINE INDUSTRIAL
 NEIGHBORHOOD

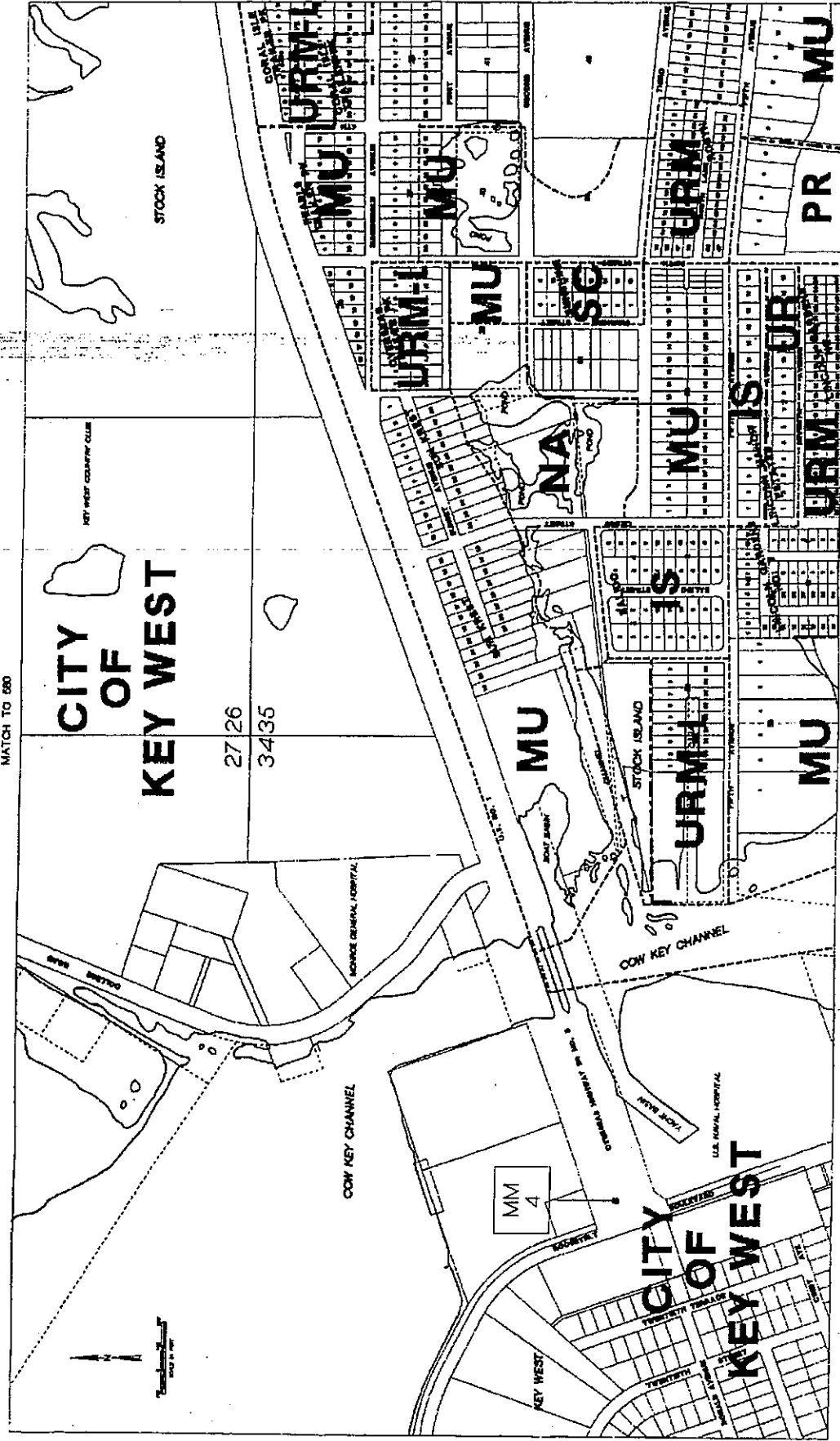
STOCK ISLAND

STRAITS OF FLORIDA

MATCH TO 571

MATCH TO 577

MATCH TO 583



MONROE COUNTY, FLORIDA,
LAND USE DISTRICT MAP

DATE: 1/1/71
BY: [Signature]
FOR: [Signature]

1. CERTAIN THAT THE LAND IS IN AN OPEN, UNDEVELOPED STATE, AND THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.
2. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.
3. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.

4. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.
5. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.

6. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.
7. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.

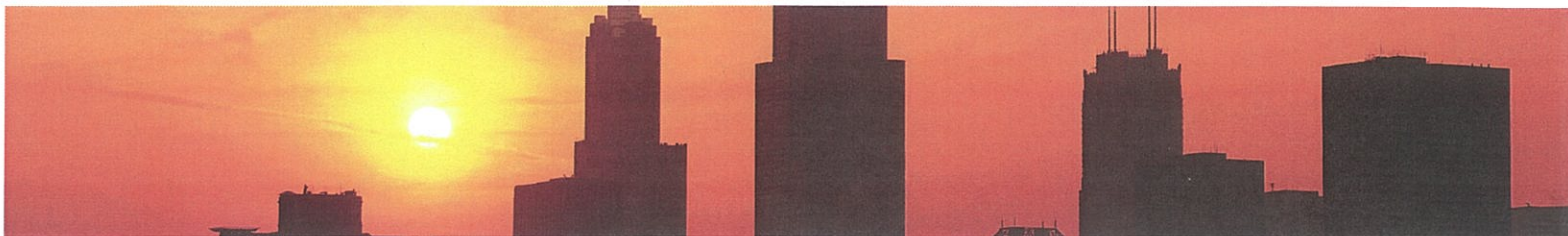
8. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.
9. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.

10. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.
11. CERTAIN THAT THE LAND IS NOT BEING USED FOR ANY OTHER PURPOSE.

Ms. Emily Schemper, Assistant Director
August 16, 2018
Page 21

Exhibit "B"

NCA Report



Climate Change Impacts in the United States

CHAPTER 2 OUR CHANGING CLIMATE

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Recommended Citation for Chapter

Walsh, J., D. Wuebbles, K. Hayhoe, J. Kossin, K. Kunkel, G. Stephens, P. Thorne, R. Vose, M. Wehner, J. Willis, D. Anderson, S. Doney, R. Feely, P. Hennon, V. Kharin, T. Knutson, F. Landerer, T. Lenton, J. Kennedy, and R. Somerville, 2014: Ch. 2: Our Changing Climate. *Climate Change Impacts in the United States: The Third National Climate Assessment*, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 19-67. doi:10.7930/JOKW5CXT.

On the Web: <http://nca2014.globalchange.gov/report/our-changing-climate/introduction>

First published May 2014. PDF revised October 2014. See errata (available at <http://nca2014.globalchange.gov/downloads>) for details.



INFORMATION DRAWN FROM THIS CHAPTER IS INCLUDED IN THE HIGHLIGHTS REPORT AND IS IDENTIFIED BY THIS ICON

2 OUR CHANGING CLIMATE

KEY MESSAGES

1. Global climate is changing and this change is apparent across a wide range of observations. The global warming of the past 50 years is primarily due to human activities.
2. Global climate is projected to continue to change over this century and beyond. The magnitude of climate change beyond the next few decades depends primarily on the amount of heat-trapping gases emitted globally, and how sensitive the Earth's climate is to those emissions.
3. U.S. average temperature has increased by 1.3°F to 1.9°F since record keeping began in 1895; most of this increase has occurred since about 1970. The most recent decade was the nation's warmest on record. Temperatures in the United States are expected to continue to rise. Because human-induced warming is superimposed on a naturally varying climate, the temperature rise has not been, and will not be, uniform or smooth across the country or over time.
4. The length of the frost-free season (and the corresponding growing season) has been increasing nationally since the 1980s, with the largest increases occurring in the western United States, affecting ecosystems and agriculture. Across the United States, the growing season is projected to continue to lengthen.
5. Average U.S. precipitation has increased since 1900, but some areas have had increases greater than the national average, and some areas have had decreases. More winter and spring precipitation is projected for the northern United States, and less for the Southwest, over this century.
6. Heavy downpours are increasing nationally, especially over the last three to five decades. Largest increases are in the Midwest and Northeast. Increases in the frequency and intensity of extreme precipitation events are projected for all U.S. regions.
7. There have been changes in some types of extreme weather events over the last several decades. Heat waves have become more frequent and intense, especially in the West. Cold waves have become less frequent and intense across the nation. There have been regional trends in floods and droughts. Droughts in the Southwest and heat waves everywhere are projected to become more intense, and cold waves less intense everywhere.
8. The intensity, frequency, and duration of North Atlantic hurricanes, as well as the frequency of the strongest (Category 4 and 5) hurricanes, have all increased since the early 1980s. The relative contributions of human and natural causes to these increases are still uncertain. Hurricane-associated storm intensity and rainfall rates are projected to increase as the climate continues to warm.
9. Winter storms have increased in frequency and intensity since the 1950s, and their tracks have shifted northward over the United States. Other trends in severe storms, including the intensity and frequency of tornadoes, hail, and damaging thunderstorm winds, are uncertain and are being studied intensively.

Continued



KEY MESSAGES (CONTINUED)

10. Global sea level has risen by about 8 inches since reliable record keeping began in 1880. It is projected to rise another 1 to 4 feet by 2100.
11. Rising temperatures are reducing ice volume and surface extent on land, lakes, and sea. This loss of ice is expected to continue. The Arctic Ocean is expected to become essentially ice free in summer before mid-century.
12. The oceans are currently absorbing about a quarter of the carbon dioxide emitted to the atmosphere annually and are becoming more acidic as a result, leading to concerns about intensifying impacts on marine ecosystems.

This chapter summarizes how climate is changing, why it is changing, and what is projected for the future. While the focus is on changes in the United States, the need to provide context sometimes requires a broader geographical perspective. Additional geographic detail is presented in the regional chapters of this report. Further details on the topics covered by this chapter are provided in the Climate Science Supplement and Frequently Asked Questions Appendices.

Since the second National Climate Assessment was published in 2009,¹ the climate has continued to change, with resulting

effects on the United States. The trends described in the 2009 report have continued, and our understanding of the data and ability to model the many facets of the climate system have increased substantially. Several noteworthy advances are mentioned in the box below.

The 12 key messages presented above are repeated below, together with supporting evidence for those messages. The discussion of each key message begins with a summary of recent variations or trends, followed by projections of the corresponding changes for the future.

WHAT'S NEW?

- Continued warming and an increased understanding of the U.S. temperature record, as well as multiple other sources of evidence, have strengthened our confidence in the conclusions that the warming trend is clear and primarily the result of human activities. For the contiguous United States, the last decade was the warmest on record, and 2012 was the warmest year on record.
- Heavy precipitation and extreme heat events are increasing in a manner consistent with model projections; the risks of such extreme events will rise in the future.
- The sharp decline in summer Arctic sea ice has continued, is unprecedented, and is consistent with human-induced climate change. A new record for minimum area of Arctic sea ice was set in 2012.
- A longer and better-quality history of sea level rise has increased confidence that recent trends are unusual and human-induced. Limited knowledge of ice sheet dynamics leads to a broad range for projected sea level rise over this century.
- New approaches to building scenarios of the future have allowed for investigations of the implications of larger reductions in heat trapping gas emissions than examined previously.

REFERENCE PERIODS FOR GRAPHS

Many of the graphs in this report illustrate historical changes and future trends in climate compared to some reference period, with the choice of this period determined by the purpose of the graph and the availability of data. The great majority of graphs are based on one of two reference periods. The period 1901-1960 is used for graphs that illustrate past changes in climate conditions, whether in observations or in model simulations. The choice of 1960 as the ending date of this period was based on past changes in human influences on the climate system. Human-induced forcing exhibited a slow rise during the early part of the last century but then accelerated after 1960.² Thus, these graphs highlight observed changes in climate during the period of rapid increase in human-caused forcing and also reveal how well climate models simulate these observed changes. The beginning date of 1901 was chosen because earlier historical observations are less reliable and because many climate model simulations begin in 1900 or 1901. The other commonly used reference period is 1971-2000, which is consistent with the World Meteorological Organization's recommended use of 30-year periods for climate statistics. This is used for graphs that illustrate projected future changes simulated by climate models. The purpose of these graphs is to show projected changes compared to a period that people have recently experienced and can remember; thus, the most recent available 30-year period was chosen (the historical period simulated by the CMIP3 models ends in 1999 or 2000).

Key Message 1: Observed Climate Change

Global climate is changing and this change is apparent across a wide range of observations. The global warming of the past 50 years is primarily due to human activities.

Climate is defined as long-term averages and variations in weather measured over a period of several decades. The Earth's climate system includes the land surface, atmosphere, oceans, and ice. Many aspects of the global climate are changing rapidly, and the primary drivers of that change are human in origin. Evidence for changes in the climate system abounds, from the top of the atmosphere to the depths of the oceans (Figure 2.1).³ Scientists and engineers from around the world have compiled this evidence using satellites, weather balloons, thermometers at surface stations, and many other types of observing systems that monitor the Earth's weather and climate. The sum total of this evidence tells an unambiguous story: the planet is warming.

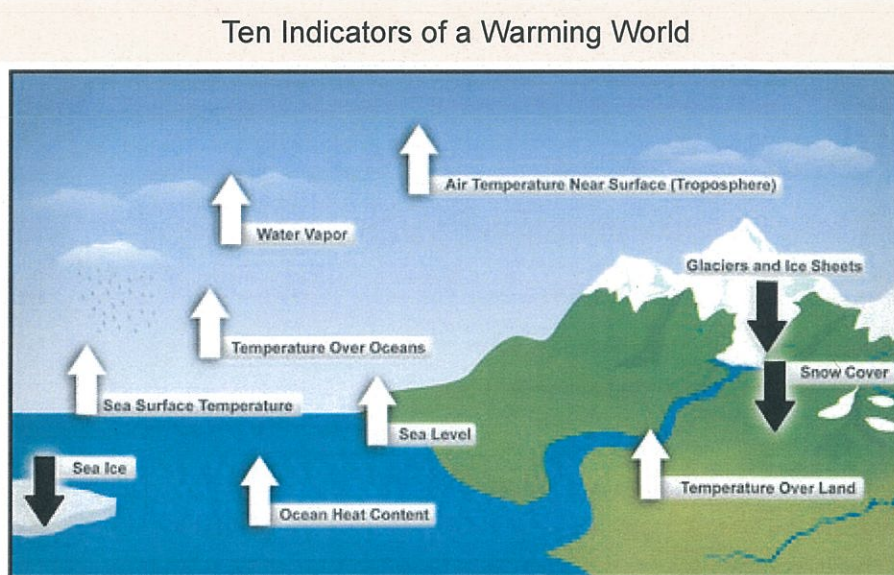


Figure 2.1. These are just some of the indicators measured globally over many decades that show that the Earth's climate is warming. White arrows indicate increasing trends, and black arrows indicate decreasing trends. All the indicators expected to increase in a warming world are, in fact, increasing, and all those expected to decrease in a warming world are decreasing. (Figure source: NOAA NCDC based on data updated from Kennedy et al. 2010³).

Temperatures at the surface, in the troposphere (the active weather layer extending up to about 5 to 10 miles above the ground), and in the oceans have all increased over recent decades (Figure 2.2). Consistent with our scientific understanding, the largest increases in temperature are occur-

ring closer to the poles, especially in the Arctic. Snow and ice cover have decreased in most areas. Atmospheric water vapor is increasing in the lower atmosphere, because a warmer atmosphere can hold more water. Sea levels are also increasing (see Key Message 10). Changes in other climate-

relevant indicators such as growing season length have been observed in many areas. Worldwide, the observed changes in average conditions have been accompanied by increasing trends in extremes of heat and heavy precipitation events, and decreases in extreme cold.⁴

Natural drivers of climate cannot explain the recent observed warming. Over the last five decades, natural factors (solar forcing and volcanoes) alone would actually have led to a slight cooling (see Figure 2.3).⁵

The majority of the warming at the global scale over the past 50 years can only be explained by the effects of human influences,^{5,6,7} especially the emissions from burning fossil fuels (coal, oil, and natural gas) and from deforestation. The emissions from human influences that are affecting climate include heat-trapping gases such as carbon dioxide (CO₂), methane, and nitrous oxide, and particles such as black carbon (soot), which has a warming influence, and sulfates, which have an overall cooling influence (see Appendix 3: Climate Science Supplement for further discussion).^{8,9} In addition to human-induced global climate change, local climate can also be affected by other human factors (such as crop irrigation) and natural variability (for example, Ashley et al. 2012; DeAngelis et al. 2010; Degu et al. 2011; Lo and Famiglietti 2013¹⁰).

The conclusion that human influences are the primary driver of recent climate change is based on multiple lines of independent evidence. The first line of evidence is our fundamental understanding of how certain gases trap heat, how the climate system responds to increases in these gases, and how other human and natural factors influence climate. The second line of evidence is from reconstructions of past climates using evidence such as tree rings, ice cores, and corals. These show that global surface temperatures over the last several decades are clearly unusual, with the last decade (2000-2009) warmer than any time in at least the last 1300 years and perhaps much longer.¹¹

Global Temperature and Carbon Dioxide

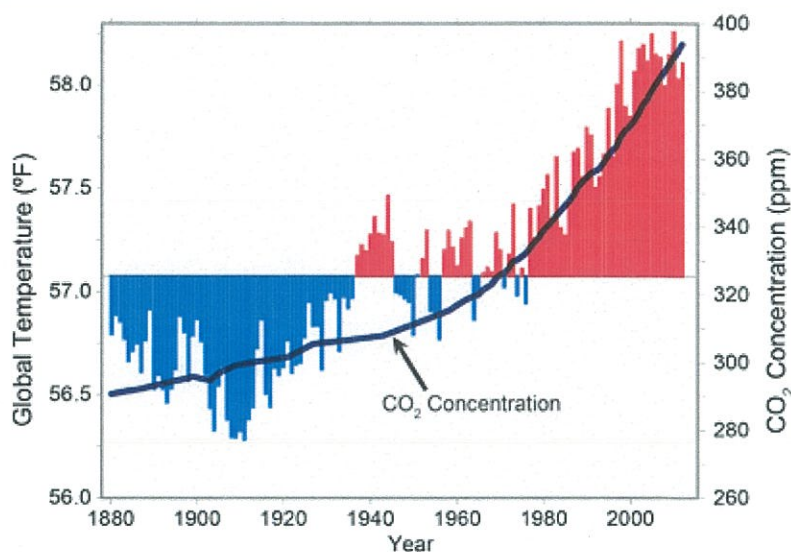


Figure 2.2. Global annual average temperature (as measured over both land and oceans) has increased by more than 1.5°F (0.8°C) since 1880 (through 2012). Red bars show temperatures above the long-term average, and blue bars indicate temperatures below the long-term average. The black line shows atmospheric carbon dioxide (CO₂) concentration in parts per million (ppm). While there is a clear long-term global warming trend, some years do not show a temperature increase relative to the previous year, and some years show greater changes than others. These year-to-year fluctuations in temperature are due to natural processes, such as the effects of El Niños, La Niñas, and volcanic eruptions. (Figure source: updated from Karl et al. 2009¹).

Separating Human and Natural Influences on Climate

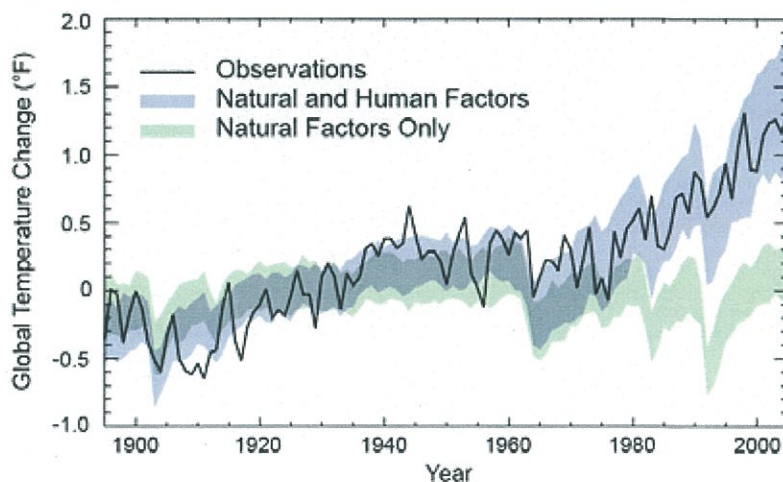


Figure 2.3. Observed global average changes (black line), model simulations using only changes in natural factors (solar and volcanic) in green, and model simulations with the addition of human-induced emissions (blue). Climate changes since 1950 cannot be explained by natural factors or variability, and can only be explained by human factors. (Figure source: adapted from Huber and Knutti²⁹).

The third line of evidence comes from using climate models to simulate the climate of the past century, separating the human and natural factors that influence climate. When the human factors are removed, these models show that solar and volcanic activity would have tended to slightly cool the earth, and other natural variations are too small to explain the amount of warming. Only when the human influences are included do the models reproduce the warming observed over the past 50 years (see Figure 2.3).

Another line of evidence involves so-called “fingerprint” studies that are able to attribute observed climate changes to particular causes. For example, the fact that the stratosphere (the layer above the troposphere) is cooling while the Earth’s surface and lower atmosphere is warming is a fingerprint that the warming is due to increases in heat-trapping gases. In contrast, if the observed warming had been due to increases in solar output, Earth’s atmosphere would have warmed throughout its entire extent, including the stratosphere.⁶

In addition to such temperature analyses, scientific attribution of observed changes to human influence extends to many other aspects of climate, such as changing patterns in precipitation,^{12,13} increasing humidity,^{14,15} changes in pressure,¹⁶ and increasing ocean heat content.¹⁷ Further discussion of how we know the recent changes in climate are caused by human activity is provided in Appendix 3: Climate Science Supplement.

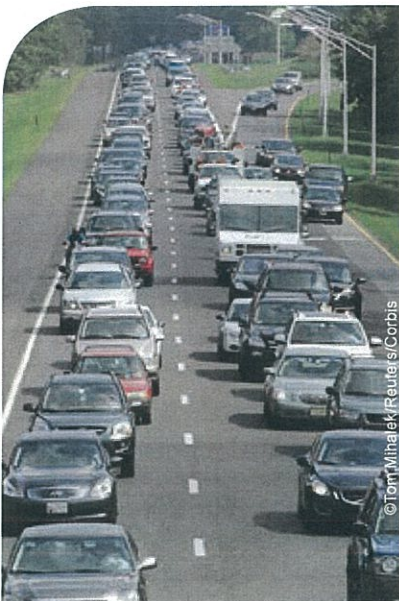
Natural variations in climate include the effects of cycles such as El Niño, La Niña and other ocean cycles; the 11-year sunspot cycle and other changes in energy from the sun; and the effects of volcanic eruptions. Globally, natural variations can be

as large as human-induced climate change over timescales of up to a few decades. However, changes in climate at the global scale observed over the past 50 years are far larger than can be accounted for by natural variability. Changes in climate at the local to regional scale can be influenced by natural variability for multiple decades.¹⁸ This can affect the interpretation of climate trends observed regionally across the U.S. (see Appendix 3: Climate Science Supplement).

Globally averaged surface air temperature has slowed its rate of increase since the late 1990s. This is not in conflict with our basic understanding of global warming and its primary cause. The decade of 2000 to 2009 was still the warmest decade on record. In addition, global surface air temperature does not always increase steadily. This time period is too short to signify a change in the warming trend, as climate trends are measured over periods of decades, not years.^{19,20,21,22} Such decade-long slowdowns or even reversals in trend have occurred before in the global instrumental record (for example, 1900-1910 and 1940-1950; see Figure 2.2), including three decade-long periods since 1970, each followed by a sharp temperature rise.²³ Nonetheless, satellite and ocean observations indicate that the Earth-atmosphere climate system has continued to gain heat energy.²⁴

There are a number of possible contributions to the lower rate of increase over the last 15 years. First, the solar output during the latest 11-year solar cycle has been lower over the past 15 years than the past 60 years. Second, a series of mildly explosive volcanoes, which increased stratospheric particles, likely had more of a cooling effect than previously recognized.²⁵ Third, the high incidence of La Niña events in the last 15 years has played a role in the observed trends.^{20,26} Recent analyses²⁷ suggest that more of the increase in heat energy during this period has been transferred to the deep ocean than previously. While this might temporarily slow the rate of increase in surface air temperature, ultimately it will prolong the effects of global warming because the oceans hold heat for longer than the atmosphere does.

Climate models are not intended to match the real-world timing of natural climate variations – instead, models have their own internal timing for such variations. Most modeling studies do not yet account for the observed changes in solar and volcanic forcing mentioned in the previous paragraph. Therefore, it is not surprising that the timing of such a slowdown in the rate of increase in the models would be different than that observed, although it is important to note that such periods *have* been simulated by climate models, with the deep oceans absorbing the extra heat during those decades.²⁸



Oil used for transportation and coal used for electricity generation are the largest contributors to the rise in carbon dioxide that is the primary driver of observed changes in climate over recent decades.

MODELS USED IN THE ASSESSMENT

This report uses various projections from models of the physical processes affecting the Earth's climate system, which are discussed further in Appendix 3: Climate Science Supplement. Three distinct sets of model simulations for past and projected changes in climate are used:

- Coupled Model Intercomparison Project, 3rd phase (CMIP3): global model analyses done for the Fourth Intergovernmental Panel on Climate Change (IPCC) assessment. Spatial resolutions typically vary from 125 to 187 miles (at mid-latitudes); approximately 25 representations of different models (not all are used in all studies). CMIP3 findings are the foundation for most of the impact analyses included in this assessment.
- Coupled Model Intercomparison Project, 5th phase (CMIP5): newer global model analyses done for the Fifth IPCC assessment generally based on improved formulations of the CMIP3 models. Spatial resolutions typically vary from 62 to 125 miles; about 30 representations of different models (not all are used in all studies); this new information was not available in time to serve as the foundation for the impacts analyses in this assessment, and information from CMIP5 is primarily provided for comparison purposes.
- North American Regional Climate Change Assessment Program (NARCCAP): six regional climate model analyses (and limited time-slice analyses from two global models) for the continental U.S. run at about 30-mile horizontal resolution. The analyses were done for past (1971-2000) and projected (2041-2070) time periods. Coarser resolution results from four of the CMIP3 models were used as the boundary conditions for the NARCCAP regional climate model studies, with each of the regional models doing analyses with boundary conditions from two of the CMIP3 models.

The scenarios for future human-related emissions of the relevant gases and particles used in these models are further discussed in Appendix 3: Climate Science Supplement. The emissions in these scenarios depend on various assumptions about changes in global population, economic and technological development, and choices in transportation and energy use.

Key Message 2: Future Climate Change

Global climate is projected to continue to change over this century and beyond. The magnitude of climate change beyond the next few decades depends primarily on the amount of heat-trapping gases emitted globally, and how sensitive the Earth's climate is to those emissions.

A certain amount of continued warming of the planet is projected to occur as a result of human-induced emissions to date; another 0.5°F increase would be expected over the next few decades even if all emissions from human activities suddenly stopped,³⁰ although natural variability could still play an important role over this time period.³¹ However, choices made now and in the next few decades will determine the amount of additional future warming. Beyond mid-century, lower levels of heat-trapping gases in scenarios with reduced emissions will lead to noticeably less future warming. Higher emissions levels will result in more warming, and thus more severe impacts on human society and the natural world.

Confidence in projections of future climate change has increased. The wider range of potential changes in global average temperature in the latest generation of climate model simulations³² used in the Intergovernmental Panel on Climate

Change's (IPCC) current assessment – versus those in the previous assessment⁸ – is simply a result of considering more options for future human behavior. For example, one of the scenarios included in the IPCC's latest assessment assumes aggressive emissions reductions designed to limit the global temperature increase to 3.6°F (2°C) above pre-industrial levels.³³ This path would require rapid emissions reductions (more than 70% reduction in human-related emissions by 2050, and net negative emissions by 2100 – see the Appendix 3: Climate Science, Supplemental Message 5) sufficient to achieve heat-trapping gas concentrations well below those of any of the scenarios considered by the IPCC in its 2007 assessment. Such scenarios enable the investigation of climate impacts that would be avoided by deliberate, substantial reductions in heat-trapping gas emissions.

Projections of future changes in precipitation show small increases in the global average but substantial shifts in where and how precipitation falls. Generally, areas closest to the poles are projected to receive more precipitation, while the dry subtropics (the region just outside the tropics, between 23° and 35° on either side of the equator) expand toward the poles and receive less rain. Increases in tropical precipitation are projected during rainy seasons (such as monsoons), especially over the tropical Pacific. Certain regions, including the western U.S. (especially the Southwest¹) and the Mediter-

anean, are presently dry and are expected to become drier. The widespread trend of increasing heavy downpours is expected to continue, with precipitation becoming less frequent but more intense.³⁴ The patterns of the projected changes of precipitation do not contain the spatial details that characterize observed precipitation, especially in mountainous terrain, because the projections are averages from multiple models and because the effective resolution of global climate models is roughly 100-200 miles.

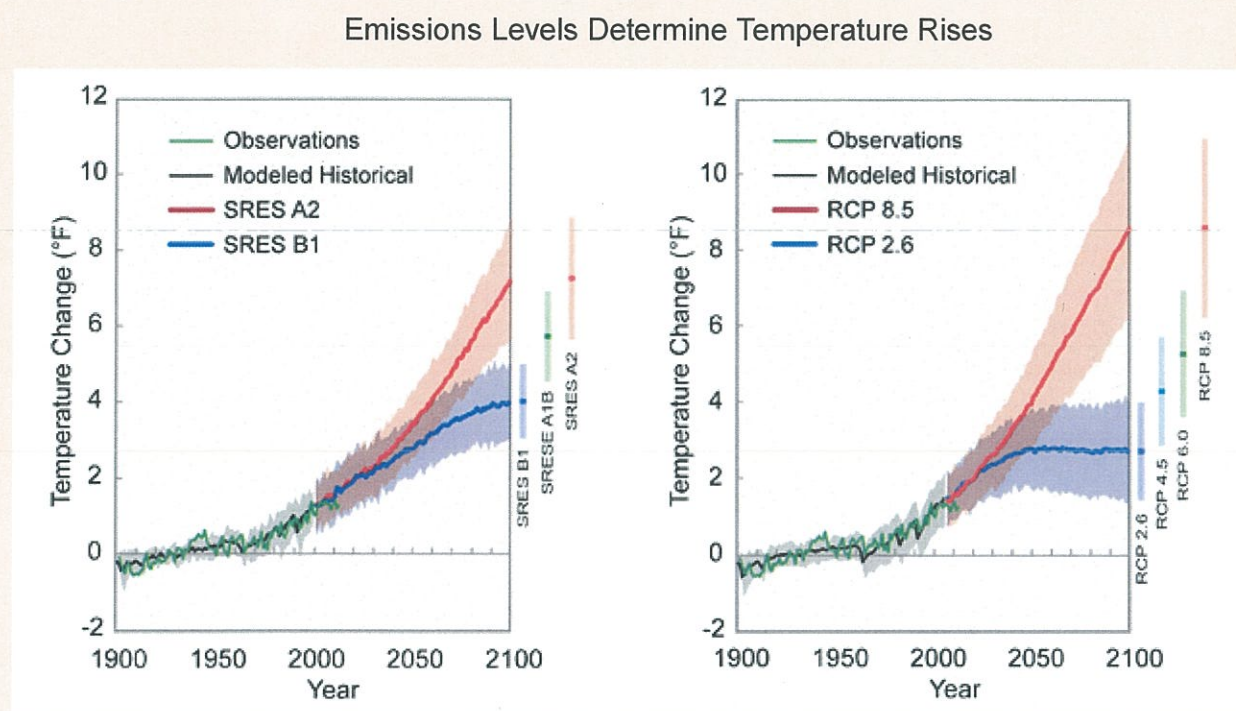


Figure 2.4. Different amounts of heat-trapping gases released into the atmosphere by human activities produce different projected increases in Earth's temperature. In the figure, each line represents a central estimate of global average temperature rise (relative to the 1901-1960 average) for a specific emissions pathway. Shading indicates the range (5th to 95th percentile) of results from a suite of climate models. Projections in 2099 for additional emissions pathways are indicated by the bars to the right of each panel. In all cases, temperatures are expected to rise, although the difference between lower and higher emissions pathways is substantial. **(Left)** The panel shows the two main scenarios (SRES – Special Report on Emissions Scenarios) used in this report: A2 assumes continued increases in emissions throughout this century, and B1 assumes much slower increases in emissions beginning now and significant emissions reductions beginning around 2050, though not due explicitly to climate change policies. **(Right)** The panel shows newer analyses, which are results from the most recent generation of climate models (CMIP5) using the most recent emissions pathways (RCPs – Representative Concentration Pathways). Some of these new projections explicitly consider climate policies that would result in emissions reductions, which the SRES set did not.³⁵ The newest set includes both lower and higher pathways than did the previous set. The lowest emissions pathway shown here, RCP 2.6, assumes immediate and rapid reductions in emissions and would result in about 2.5°F of warming in this century. The highest pathway, RCP 8.5, roughly similar to a continuation of the current path of global emissions increases, is projected to lead to more than 8°F warming by 2100, with a high-end possibility of more than 11°F. (Data from CMIP3, CMIP5, and NOAA NCDC).

Projected Change in Average Annual Temperature

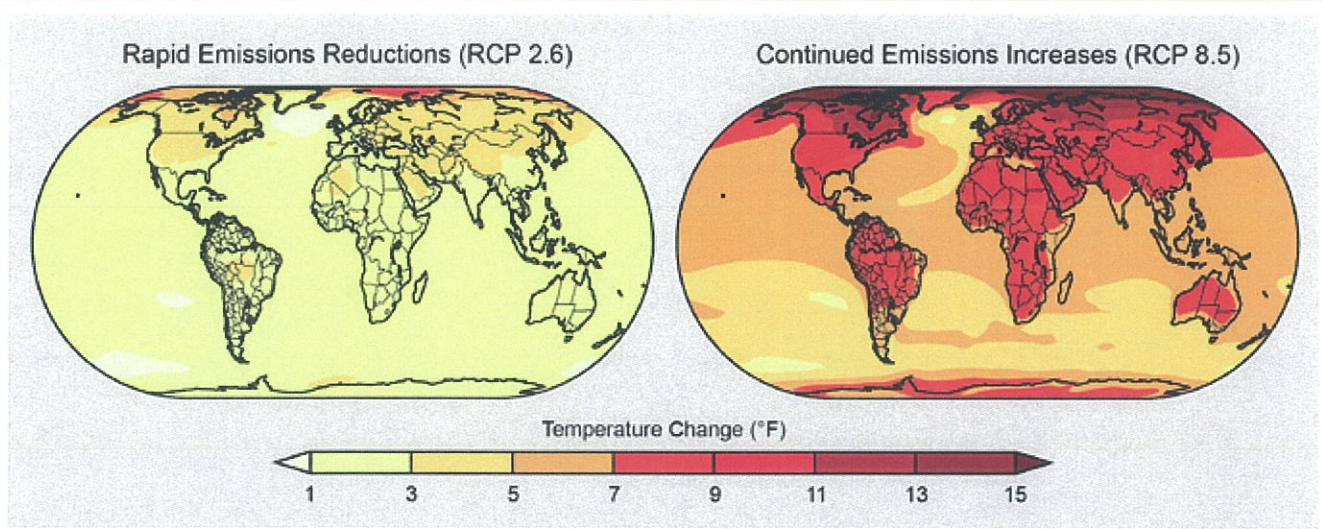


Figure 2.5. Projected change in average annual temperature over the period 2071-2099 (compared to the period 1970-1999) under a low scenario that assumes rapid reductions in emissions and concentrations of heat-trapping gases (RCP 2.6), and a higher scenario that assumes continued increases in emissions (RCP 8.5). (Figure source: NOAA NCDC / CICS-NC).

Projected Change in Average Annual Precipitation

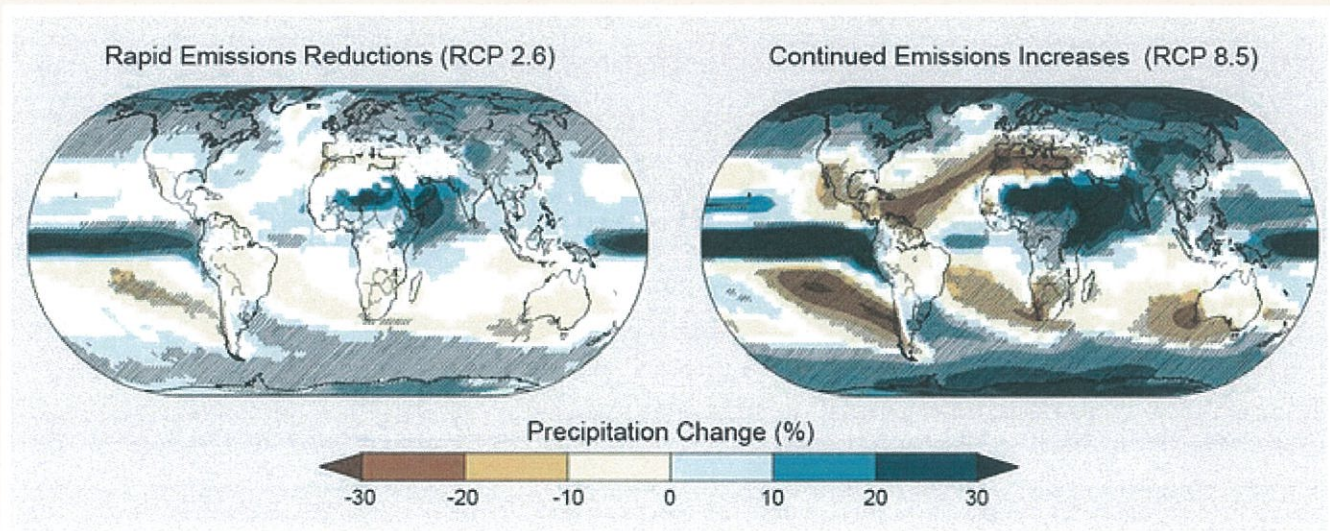


Figure 2.6. Projected change in average annual precipitation over the period 2071-2099 (compared to the period 1970-1999) under a low scenario that assumes rapid reductions in emissions and concentrations of heat-trapping gases (RCP 2.6), and a higher scenario that assumes continued increases in emissions (RCP 8.5). Hatched areas indicate confidence that the projected changes are significant and consistent among models. White areas indicate that the changes are not projected to be larger than could be expected from natural variability. In general, northern parts of the U.S. (especially the Northeast and Alaska) are projected to receive more precipitation, while southern parts (especially the Southwest) are projected to receive less. (Figure source: NOAA NCDC / CICS-NC).

CLIMATE SENSITIVITY

“Climate sensitivity” is an important concept because it helps us estimate how much warming might be expected for a given increase in the amount of heat-trapping gases. It is defined as the amount of warming expected if carbon dioxide (CO₂) concentrations doubled from pre-industrial levels and then remained constant until Earth’s temperature reached a new equilibrium over timescales of centuries to millennia. Climate sensitivity accounts for feedbacks in the climate system that can either dampen or amplify warming. The feedbacks primarily determining that response are related to water vapor, ice and snow reflectivity, and clouds.⁸ Cloud feedbacks have the largest uncertainty. The net effect of these feedbacks is expected to amplify warming.⁸

Climate sensitivity has long been estimated to be in the range of 2.7°F to 8.1°F. As discussed in Appendix 3: Climate Science Supplement, recent evidence lends further confidence in this range.

One important determinant of how much climate will change is the effect of so-called “feedbacks” in the climate system, which can either dampen or amplify the initial effect of human influences on temperature. One important climate feedback is the loss of summer Arctic sea ice, allowing absorption of substantially more of the sun’s heat in the Arctic, increasing warming, and possibly causing changes in weather patterns over the United States.

The observed drastic reduction in sea ice can also lead to a “tipping point” – a point beyond which an abrupt or irreversible transition to a different climatic state occurs. In this case, the dramatic loss of sea ice could tip the Arctic Ocean into a permanent, nearly ice-free state in summer, with repercussions that may extend far beyond the Arctic. Such potential “tipping points” have been identified in various components of the Earth’s climate system and could have important effects on future climate. The extent and magnitude of these potential effects are still unknown. These are discussed further in the Appendix 4: Frequently Asked Questions, under Question T.

Key Message 3: Recent U.S. Temperature Trends

U.S. average temperature has increased by 1.3°F to 1.9°F since record keeping began in 1895; most of this increase has occurred since about 1970. The most recent decade was the nation’s warmest on record. Temperatures in the United States are expected to continue to rise. Because human-induced warming is superimposed on a naturally varying climate, the temperature rise has not been, and will not be, uniform or smooth across the country or over time.

There have been substantial advances in our understanding of the U.S. temperature record since the 2009 assessment (see Appendix 3: Climate Science, Supplemental Message 7 for more information). These advances confirm that the U.S. annually averaged temperature has increased by 1.3°F to 1.9°F since 1895.^{1,36,37,38} However, this increase was not constant over time. In particular, temperatures generally rose until about 1940, declined slightly until about 1970, then increased rapidly thereafter. The year 2012 was the warmest on record for the contiguous United States. Over shorter time scales (one to two decades), natural variability can reduce the rate of warming or even create a temporary cooling (see Appendix 3: Climate Science, Supplemental Message 3). The cooling in mid-century that was especially prevalent over the eastern half of the U.S. may have stemmed partly from such natural variations and partly from human influences, in particular the cooling effects of sulfate particles from coal-burning power plants,³⁹ before these sulfur emissions were regulated to address health and acid rain concerns.

QUANTIFYING U.S. TEMPERATURE RISE

Quantifying long-term increases of temperature in the U.S. in a single number is challenging because the increase has not been constant over time. The increase can be quantified in a number of ways, but all of them show significant warming over the U.S. since the instrumental record began in 1895. For example, fitting a linear trend over the period 1895 to 2012 yields an increase in the range of 1.3 to 1.9°F. Another approach, comparing the average temperature during the first decade of record with the average during the last decade of record, yields a 1.9°F increase. A third approach, calculating the difference between the 1901-1960 average and the past decade average yields a change of 1.5°F. Thus, the temperature increase cited in this assessment is described as 1.3°F to 1.9°F since 1895. Notably, however, the rate of rise in temperature over the past 4 to 5 decades has been greater than the rate over earlier decades.

Observed U.S. Temperature Change

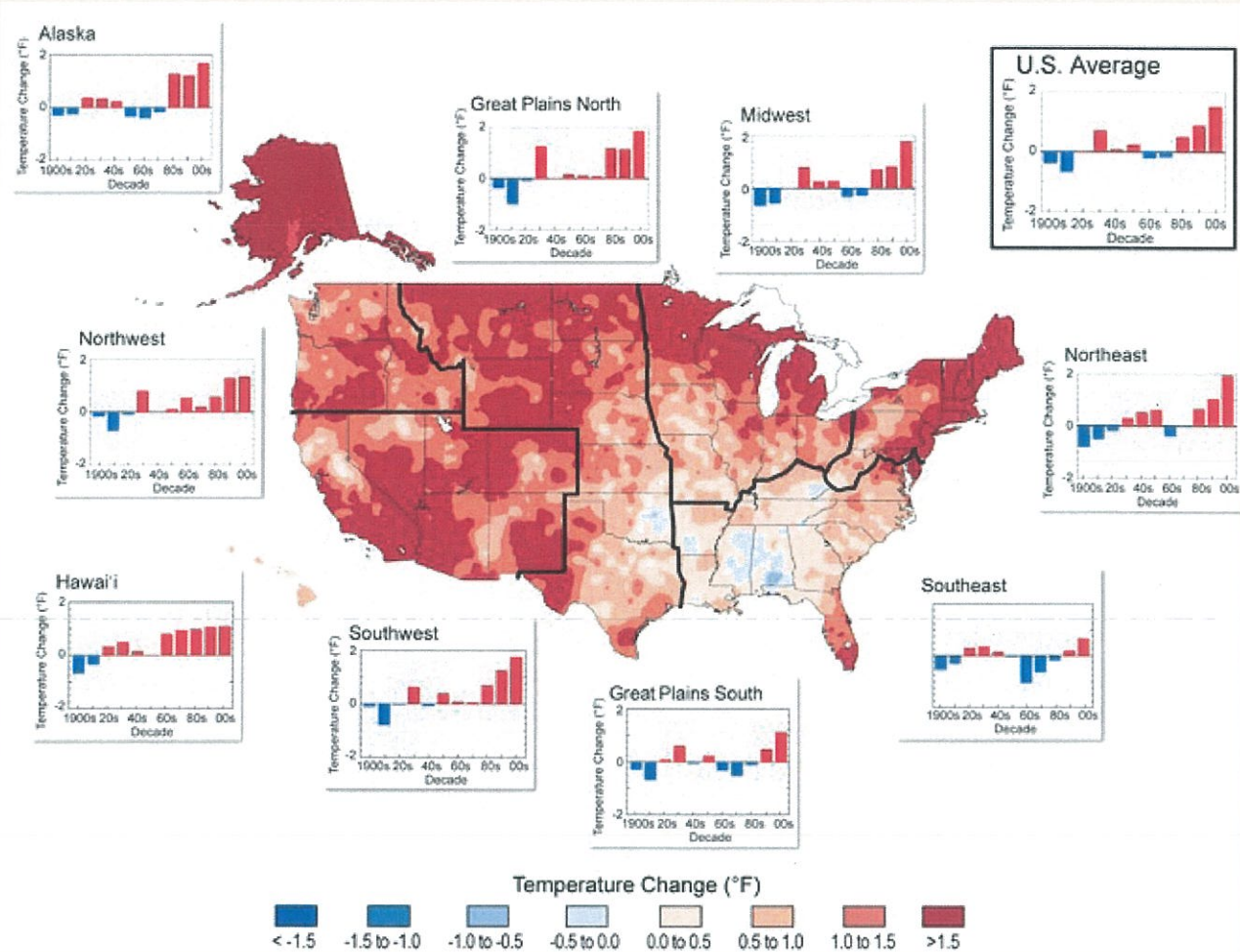


Figure 2.7. The colors on the map show temperature changes over the past 22 years (1991-2012) compared to the 1901-1960 average, and compared to the 1951-1980 average for Alaska and Hawai'i. The bars on the graphs show the average temperature changes by decade for 1901-2012 (relative to the 1901-1960 average) for each region. The far right bar in each graph (2000s decade) includes 2011 and 2012. The period from 2001 to 2012 was warmer than any previous decade in every region. (Figure source: NOAA NCDC / CICS-NC).

Since 1991, temperatures have averaged 1°F to 1.5°F higher than 1901-1960 over most of the United States, except for the Southeast, where the warming has been less than 1°F. On a seasonal basis, long-term warming has been greatest in winter and spring.

Warming is ultimately projected for all parts of the nation during this century. In the next few decades, this warming will be roughly 2°F to 4°F in most areas. By the end of the century, U.S. warming is projected to correspond closely to the level of global emissions: roughly 3°F to 5°F under lower emissions scenarios (B1 or RCP 4.5) involving substantial reductions in emissions, and 5°F to 10°F for higher emissions scenarios (A2 or RCP 8.5) that assume continued increases in emissions; the largest temperature increases are projected for the upper Midwest and Alaska.

Future human-induced warming depends on both past and future emissions of heat-trapping gases and changes in the amount of particle pollution. The amount of climate change (aside from natural variability) expected for the next two to three decades is a combination of the warming already built into the climate system by the past history of human emissions of heat-trapping gases, and the expected ongoing increases in emissions of those gases. However, the magnitude of temperature increases over the second half of this century, both in the U.S. and globally, will be primarily determined by the emissions produced now and over the next few decades, and there are substantial differences between higher, fossil-fuel intensive scenarios compared to scenarios in which emissions are reduced. The most recent model projections of climate change due to human activities expand the range of future scenarios considered (particularly at the lower end), but are entirely consistent with the older model results. This consistency increases our confidence in the projections.

Projected Temperature Change

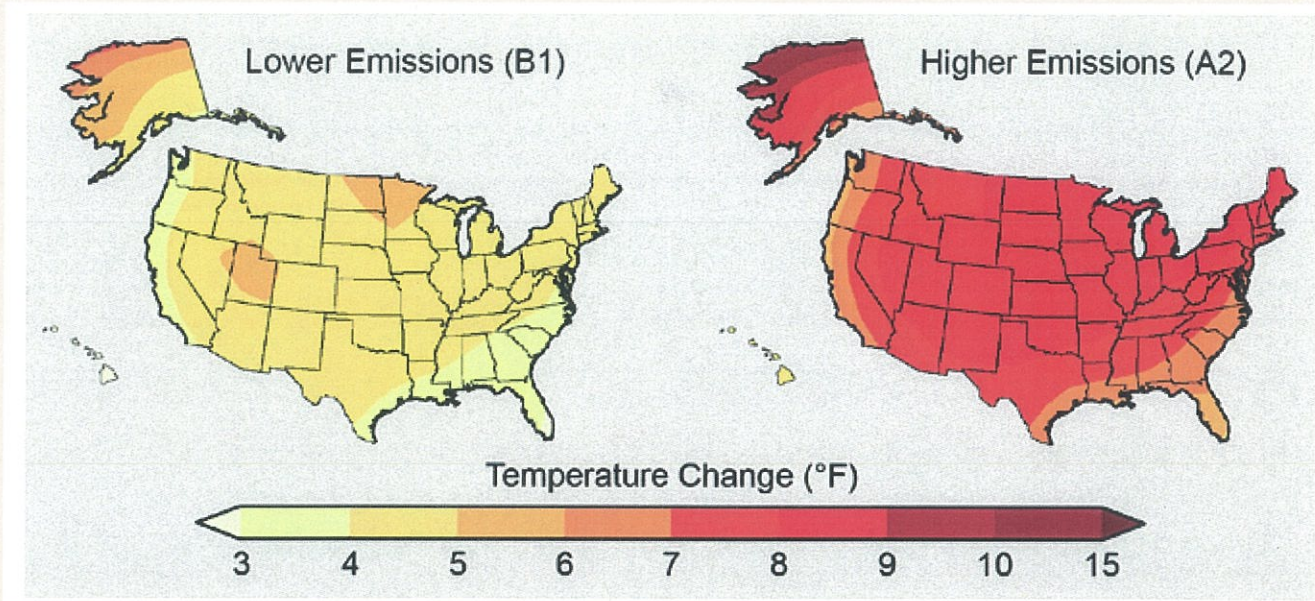


Figure 2.8. Maps show projected change in average surface air temperature in the later part of this century (2071-2099) relative to the later part of the last century (1970-1999) under a scenario that assumes substantial reductions in heat trapping gases (B1, left) and a higher emissions scenario that assumes continued increases in global emissions (A2, right). (See Appendix 3: Climate Science, Supplemental Message 5 for a discussion of temperature changes under a wider range of future scenarios for various periods of this century). (Figure source: NOAA NCDC / CICS-NC).

NEWER SIMULATIONS FOR PROJECTED TEMPERATURE (CMIP5 MODELS)

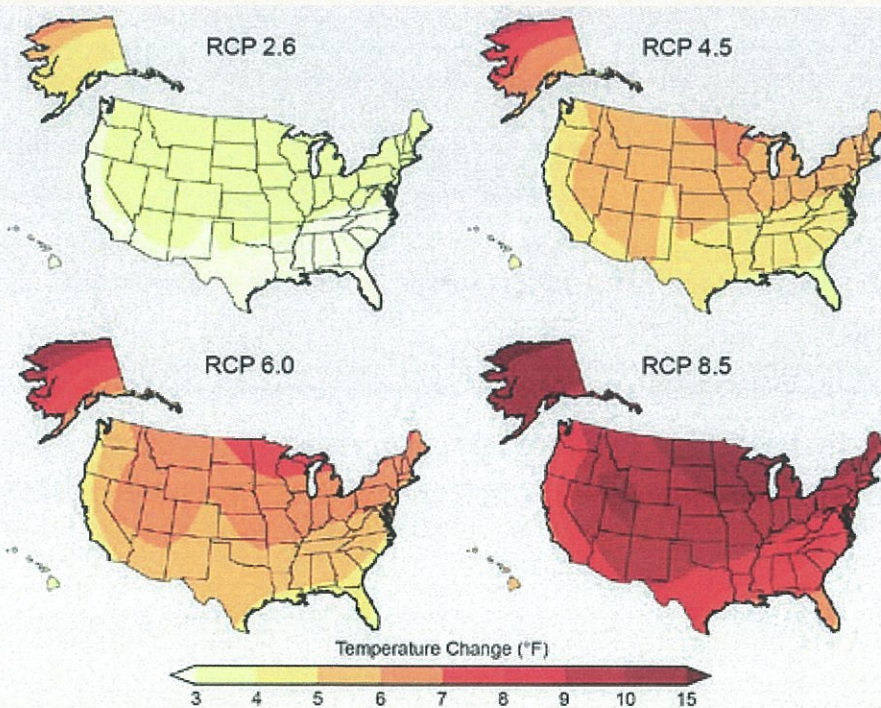


Figure 2.9. The largest uncertainty in projecting climate change beyond the next few decades is the level of heat-trapping gas emissions. The most recent model projections (CMIP5) take into account a wider range of options with regard to human behavior, including a lower scenario than has been considered before (RCP 2.6). This scenario assumes rapid reductions in emissions – more than 70% cuts from current levels by 2050 and further large decreases by 2100 – and the corresponding smaller amount of warming. On the higher end, the scenarios include one that assumes continued increases in emissions (RCP 8.5) and the corresponding greater amount of warming. Also shown are temperature changes for the intermediate scenarios RCP 4.5 (which is most similar to B1) and RCP 6.0 (which is most similar to A1B; see Appendix 3: Climate Science Supplement). Projections show change in average temperature in the later part of this century (2071-2099) relative to the late part of last century (1970-1999). (Figure source: NOAA NCDC / CICS-NC).

Key Message 4: Lengthening Frost-free Season

The length of the frost-free season (and the corresponding growing season) has been increasing nationally since the 1980s, with the largest increases occurring in the western United States, affecting ecosystems and agriculture. Across the United States, the growing season is projected to continue to lengthen.

The length of the frost-free season (and the corresponding growing season) is a major determinant of the types of plants and crops that do well in a particular region. The frost-free season length has been gradually increasing since the 1980s.⁴⁰ The last occurrence of 32°F in the spring has been occurring earlier in the year, and the first occurrence of 32°F in the fall has been happening later. During 1991-2011, the average frost-free season was about 10 days longer than during 1901-1960. These observed climate changes have been mirrored by changes in the biosphere, including increases in forest productivity^{41,42} and satellite-derived estimates of the length of the growing season.⁴³ A longer growing season provides a longer period for plant growth and productivity and can slow the increase in atmospheric CO₂ concentrations through increased CO₂ uptake by living things and their environment.⁴⁴ The longer growing season can increase the growth of beneficial plants (such as crops and forests) as well as undesirable ones (such as ragweed).⁴⁵ In some cases where moisture is limited, the greater evaporation and loss of moisture through plant transpiration (release of water from plant leaves) associated with a longer growing season can mean less productivity because of increased drying⁴⁶ and earlier and longer fire seasons.

The lengthening of the frost-free season has been somewhat greater in the western U.S. than the eastern United States,¹ increasing by 2 to 3 weeks in the Northwest and Southwest,

Observed Increase in Frost-Free Season Length

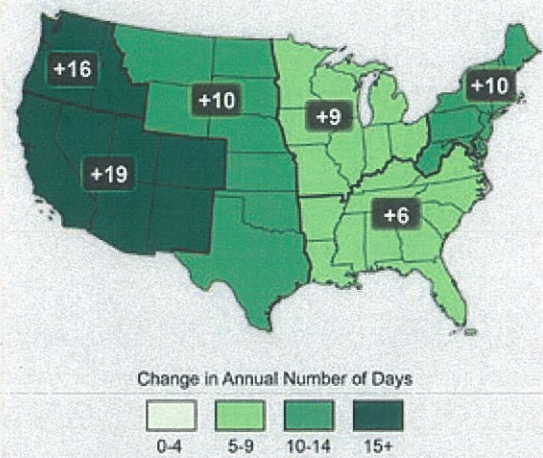


Figure 2.10. The frost-free season length, defined as the period between the last occurrence of 32°F in the spring and the first occurrence of 32°F in the fall, has increased in each U.S. region during 1991-2012 relative to 1901-1960. Increases in frost-free season length correspond to similar increases in growing season length. (Figure source: NOAA NCDC / CICS-NC).

1 to 2 weeks in the Midwest, Great Plains, and Northeast, and slightly less than 1 week in the Southeast. These differences mirror the overall trend of more warming in the north and west and less warming in the Southeast.

Projected Changes in Frost-Free Season Length

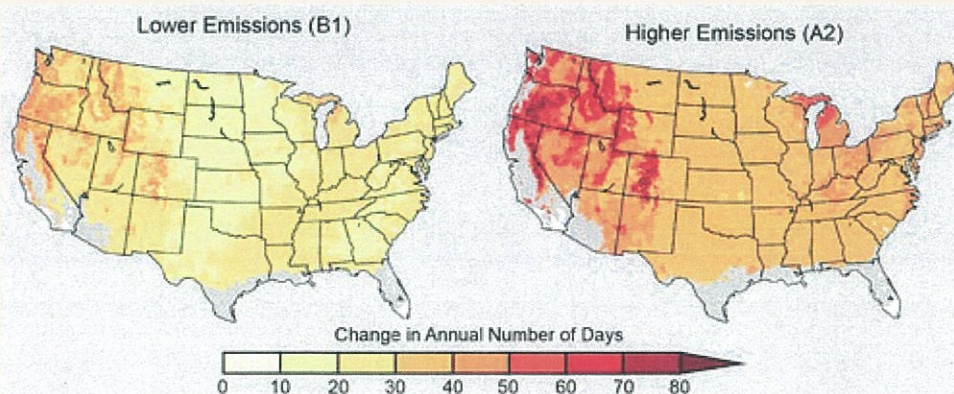


Figure 2.11. The maps show projected increases in frost-free season length for the last three decades of this century (2070-2099 as compared to 1971-2000) under two emissions scenarios, one in which heat-trapping gas emissions continue to grow (A2) and one in which emissions peak in 2050 (B1). Increases in the frost-free season correspond to similar increases in the growing season. White areas are projected to experience no freezes for 2070-2099, and gray areas are projected to experience more than 10 frost-free years during the same period. (Figure source: NOAA NCDC / CICS-NC).

In a future in which heat-trapping gas emissions continue to grow, increases of a month or more in the lengths of the frost-free and growing seasons are projected across most of the U.S. by the end of the century, with slightly smaller increases in the northern Great Plains. The largest increases in the frost-free season (more than 8 weeks) are projected for the western U.S., particularly in high elevation and coastal areas. The increases will be con-

siderably smaller if heat-trapping gas emissions are reduced, although still substantial. These increases are projected to be much greater than the normal year-to-year variability experienced today. The projected changes also imply that the south-

ern boundary of the seasonal freeze zone will move northward, with increasing frequencies of years without subfreezing temperatures in the most southern parts of the United States.

Key Message 5: U.S. Precipitation Change

Average U.S. precipitation has increased since 1900, but some areas have had increases greater than the national average, and some areas have had decreases. More winter and spring precipitation is projected for the northern United States, and less for the Southwest, over this century.

Since 1900, average annual precipitation over the U.S. has increased by roughly 5%. This increase reflects, in part, the major droughts of the 1930s and 1950s, which made the early half of the record drier. There are important regional differences. For instance, precipitation since 1991 (relative to 1901-1960) increased the most in the Northeast (8%), Midwest (9%), and southern Great Plains (8%), while much of the Southeast and Southwest had a mix of areas of increases and decreases.^{47,48}

While significant trends in average precipitation have been detected, the fraction of these trends attributable to human activity is difficult to quantify at regional scales because the range of natural variability in precipitation is large. Projected changes are generally small for central portions of the United States. However, if emissions of heat-trapping gases continue their upward trend, certain global patterns of precipitation change are projected to emerge that will affect northern and

Observed U.S. Precipitation Change

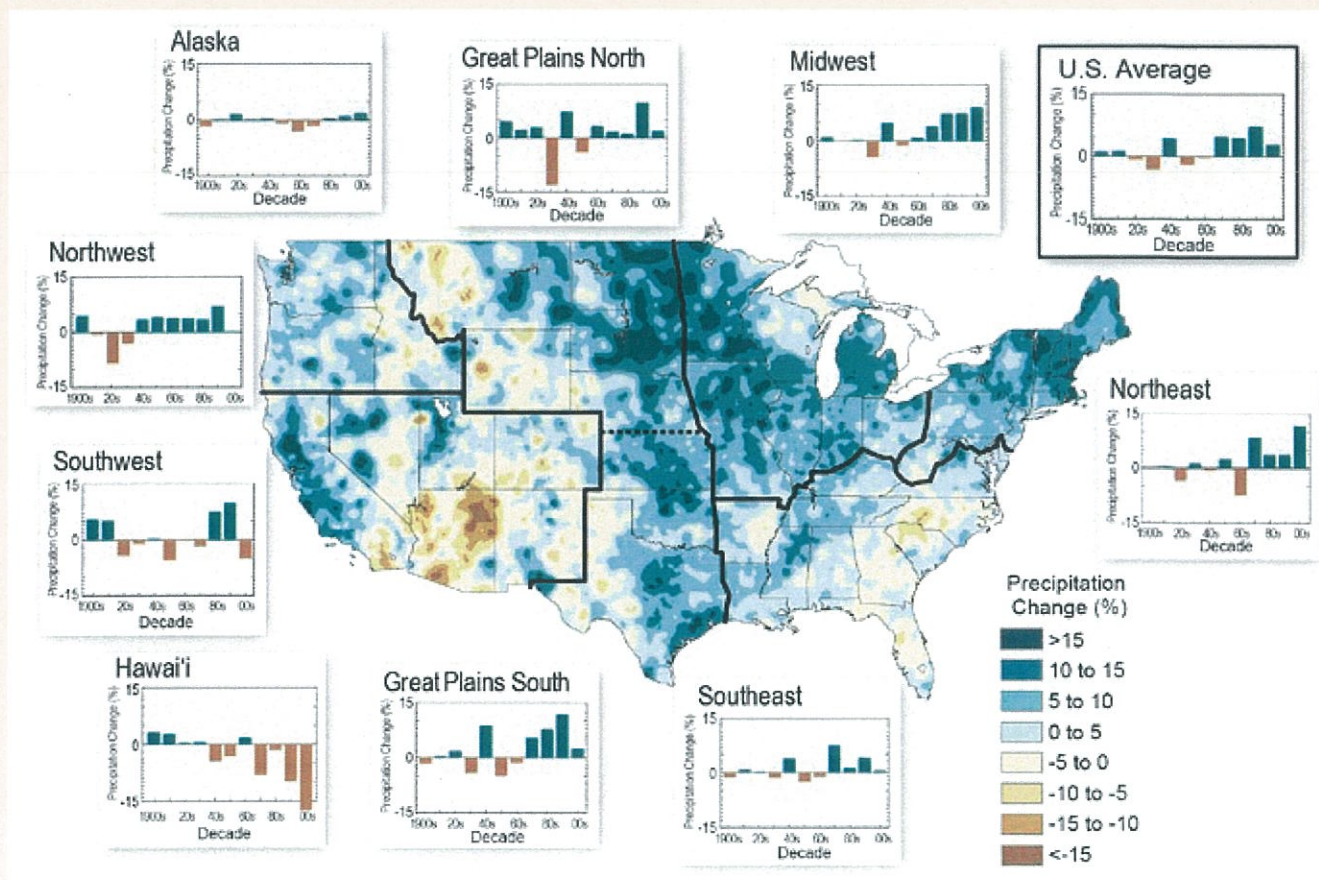


Figure 2.12. The colors on the map show annual total precipitation changes for 1991-2012 compared to the 1901-1960 average, and show wetter conditions in most areas. The bars on the far right graphs show average precipitation differences by decade for 1901-2012 (relative to the 1901-1960 average) for each region. The far right bar in each graph is for 2001-2012. (Figure source: adapted from Peterson et al. 2013⁴⁸).

southwestern areas of the United States. The northern U.S. is projected to experience more precipitation in the winter and spring (except for the Northwest in the spring), while the Southwest is projected to experience less, particularly in the spring. The contrast between wet and dry areas will increase both in the U.S. and globally – in other words, the wet areas will get wetter and the dry areas will get drier. As discussed in

the next section, there has been an increase in the amount of precipitation falling in heavy events⁴⁹ and this is projected to continue.

The projected changes in the northern U.S. are a consequence of both a warmer atmosphere (which can hold more moisture than a colder one) and associated changes in large-scale

UNCERTAINTIES IN REGIONAL PROJECTIONS

On the global scale, climate model simulations show consistent projections of future conditions under a range of emissions scenarios. For temperature, all models show warming by late this century that is much larger than historical variations nearly everywhere. For precipitation, models are in complete agreement in showing decreases in precipitation in the subtropics and increases in precipitation at higher latitudes.

Models unequivocally project large and historically unprecedented future warming in every region of the U.S. under all of the scenarios used in this assessment. The amount of warming varies substantially between higher versus lower scenarios, and moderately from model to model, but the amount of projected warming is larger than the model-to-model range.

The contiguous U.S. straddles the transition zone between drier conditions in the sub-tropics (south) and wetter conditions at higher latitudes (north). Because the precise location of this zone varies somewhat among models, projected changes in precipitation in central areas of the U.S. range from small increases to small decreases. A clear direction of change only occurs in Alaska and the far north of the contiguous U.S. where increases are projected and in the far Southwest where decreases are projected.

Although this means that changes in overall precipitation are uncertain in many U.S. areas, there is a high degree of certainty that the heaviest precipitation events will increase everywhere, and by large amounts (Figure 2.13). This consistent model projection is well understood and is a direct outcome of the increase in atmospheric moisture caused by warming. There is also more certainty regarding dry spells. The annual maximum number of consecutive dry days is projected to increase in most areas, especially the southern and northwestern portions of the contiguous United States. Thus, both extreme wetness and extreme dryness are projected to increase in many areas.

Modeling methods that downscale (generate higher spatial resolution) climate projections from coarser global model output can reduce the range of projections to the extent that they incorporate better representation of certain physical processes (such as the influence of topography and convection). However, a sizeable portion of the range is a result of the variations in large-scale patterns produced by the global models and so downscaling methods do not change this.

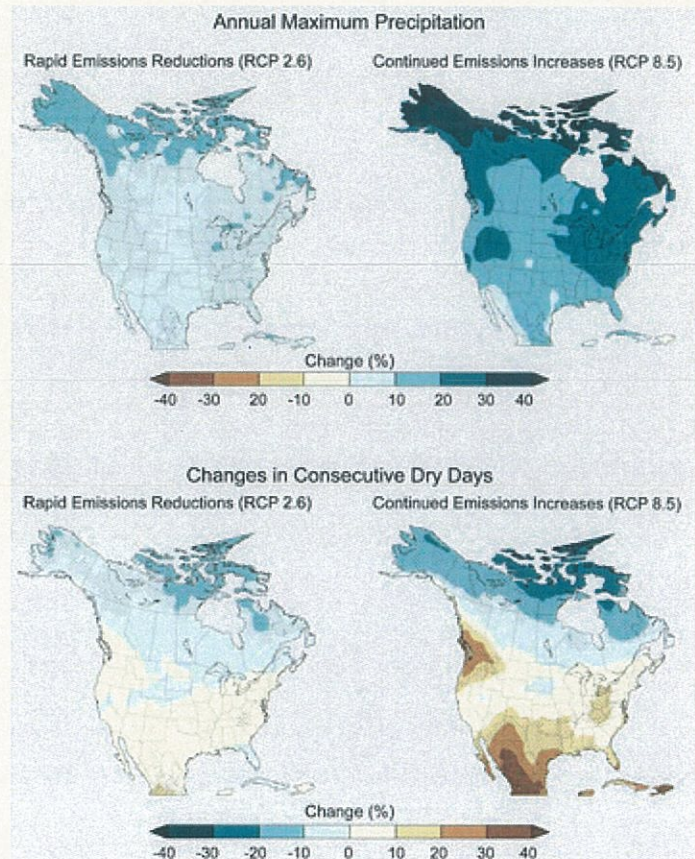


Figure 2.13. Top panels show simulated changes in the average amount of precipitation falling on the wettest day of the year for the period 2070-2099 as compared to 1971-2000 under a scenario that assumes rapid reductions in emissions (RCP 2.6) and one that assumes continued emissions increases (RCP 8.5). Bottom panels show simulated changes in the annual maximum number of consecutive dry days (days receiving less than 0.04 inches (1 mm) of precipitation) under the same two scenarios. Simulations are from CMIP5 models. Stippling indicates areas where changes are consistent among at least 80% of the models used in this analysis. (Figure source: NOAA NCDC / CICS-NC).

weather patterns (which affect where precipitation occurs). The projected reduction in Southwest precipitation is a result of changes in large-scale weather patterns, including the northward expansion of the belt of high pressure in the subtropics, which suppresses rainfall. Recent improvements in understanding these mechanisms of change increase confidence in these projections.⁵⁰ The patterns of the projected changes of precipitation resulting from human alterations of the climate are geographically smoother in these maps than what will actually be observed because: 1) the precise locations of

natural increases and decreases differ from model to model, and averaging across models smooths these differences; and 2) the resolution of current climate models is too coarse to capture fine topographic details, especially in mountainous terrain. Hence, there is considerably more confidence in the large-scale patterns of change than in local details.

In general, a comparison of the various sources of climate model data used in this assessment provides a consistent picture of the large-scale projected precipitation changes

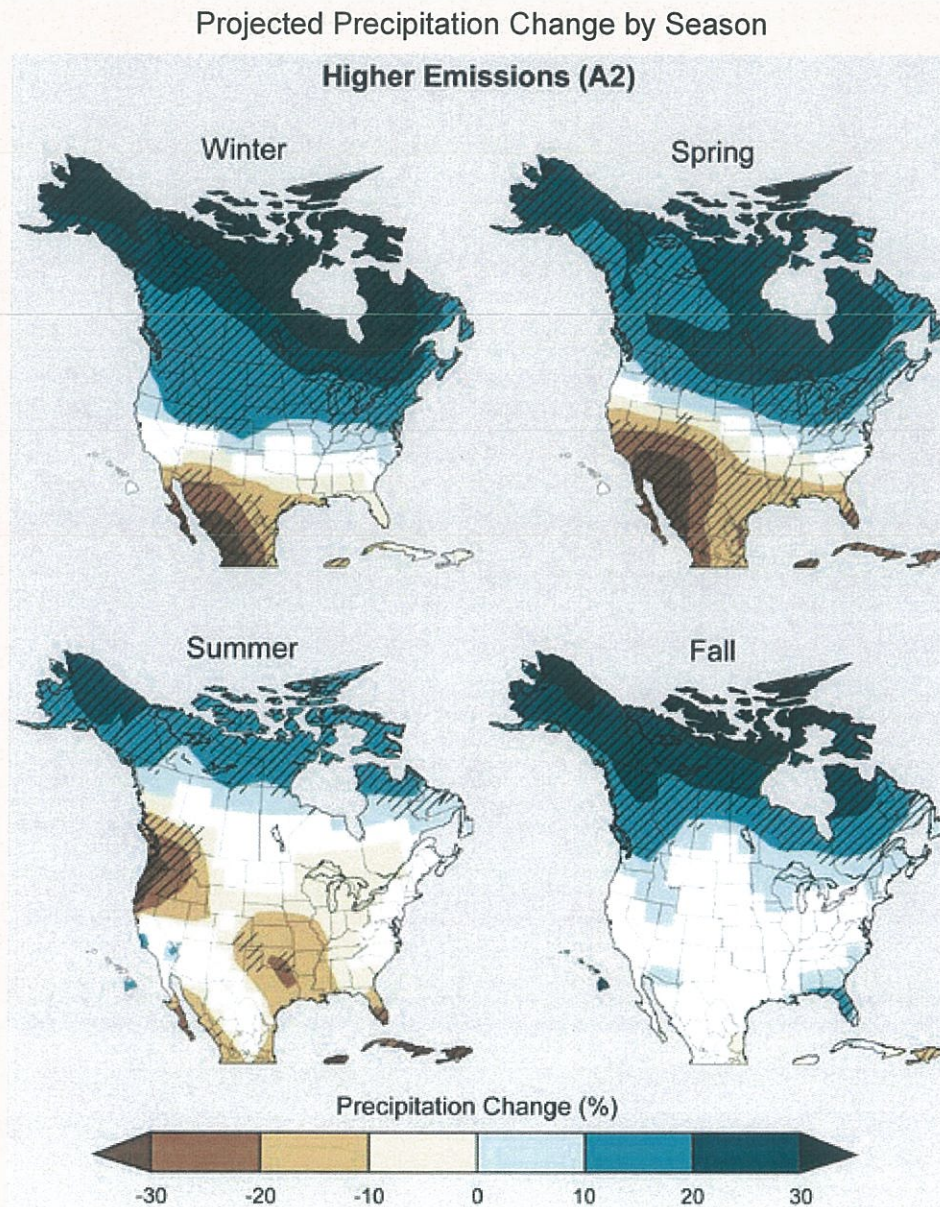


Figure 2.14. Projected change in seasonal precipitation for 2071-2099 (compared to 1970-1999) under an emissions scenario that assumes continued increases in emissions (A2). Hatched areas indicate that the projected changes are significant and consistent among models. White areas indicate that the changes are not projected to be larger than could be expected from natural variability. In general, the northern part of the U.S. is projected to see more winter and spring precipitation, while the southwestern U.S. is projected to experience less precipitation in the spring. (Figure source: NOAA NCDC / CICS-NC).

across the United States (see “Models Used in the Assessment”). Multi-model average changes in all three of these sources show a general pattern of wetter future conditions in the north and drier conditions in the south. The regional suite generally shows conditions that are somewhat wetter overall in the wet areas and not as dry in the dry areas. The general pattern agreement among these three sources, with the wide variations in their spatial resolution, provides confidence that this pattern is robust and not sensitive to the limited spatial resolution of the models. The slightly different conditions in the North American NARCCAP regional analyses for the U.S. appear to arise partially or wholly from the choice of the four CMIP3 global climate models used to drive the regional simulations. These four global models, averaged together, project average changes that are 2% wetter than the average of the suite of global models used in CMIP3.

The patterns of precipitation change in the newer CMIP5 simulations are essentially the same as in the earlier CMIP3 and NARCCAP simulations used in impact analyses throughout this report, increasing confidence in our scientific understanding. The subtle differences between these two sets of projections are mostly due to the wider range of future scenarios considered in the more recent simulations. Thus, the overall picture remains the same: wetter conditions in the north and drier conditions in the Southwest in winter and spring. Drier conditions are projected for summer in most areas of the contiguous U.S. but, outside of the Northwest and south-central region, there is generally not high confidence that the changes will be large compared to natural variability. In all models and scenarios, a transition zone between drier (to the south) and wetter (to the north) shifts northward from the southern U.S. in winter to southern Canada in summer. Wetter conditions are projected for Alaska and northern Canada in all seasons.

NEWER SIMULATIONS FOR PROJECTED PRECIPITATION CHANGE (CMIP5 MODELS)

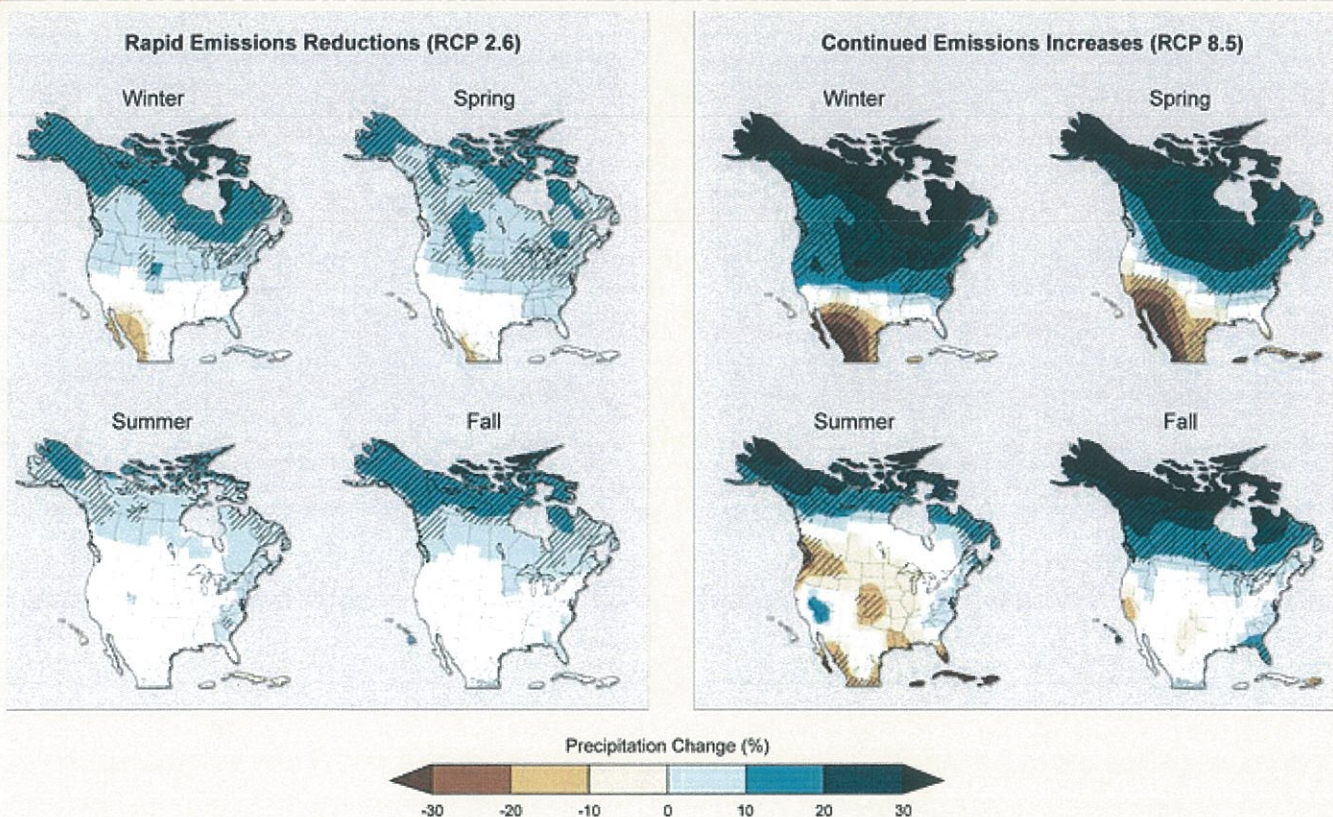


Figure 2.15. Seasonal precipitation change for 2071-2099 (compared to 1970-1999) as projected by recent simulations that include a wider range of scenarios. The maps on the left (RCP 2.6) assume rapid reductions in emissions – more than 70% cuts from current levels by 2050 – and a corresponding much smaller amount of warming and far less precipitation change. On the right, RCP 8.5 assumes continued increases in emissions, with associated large increases in warming and major precipitation changes. These would include, for example, large reductions in spring precipitation in the Southwest and large increases in the Northeast and Midwest. Rapid emissions reductions would be required for the more modest changes in the maps on the left. Hatched areas indicate that the projected changes are significant and consistent among models. White areas indicate that the changes are not projected to be larger than could be expected from natural variability. (Figure source: NOAA NCDC / CICS-NC).

Key Message 6: Heavy Downpours Increasing

Heavy downpours are increasing nationally, especially over the last three to five decades. Largest increases are in the Midwest and Northeast. Increases in the frequency and intensity of extreme precipitation events are projected for all U.S. regions.

Across most of the United States, the heaviest rainfall events have become heavier and more frequent. The amount of rain falling on the heaviest rain days has also increased over the past few decades. Since 1991, the amount of rain falling in very heavy precipitation events has been significantly above average. This increase has been greatest in the Northeast, Midwest, and upper Great Plains – more than 30% above the 1901-1960 average (see Figure 2.18). There has also been an increase in flooding events in the Midwest and Northeast where the largest increases in heavy rain amounts have occurred.

Observed U.S. Trend in Heavy Precipitation

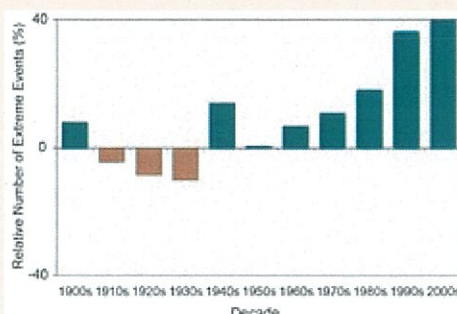


Figure 2.16: One measure of a heavy precipitation event is a 2-day precipitation total that is exceeded on average only once in a five-year period, also known as a once-in-five-year event. As this extreme precipitation index for 1901-2012 shows, the occurrence of such events has become much more common in recent decades. Changes are compared to the period 1901-1960, and do not include Alaska or Hawai'i. The 2000s decade (far right bar) includes 2001-2012. (Figure source: adapted from Kunkel et al. 2013⁵²).

Observed Change in Very Heavy Precipitation

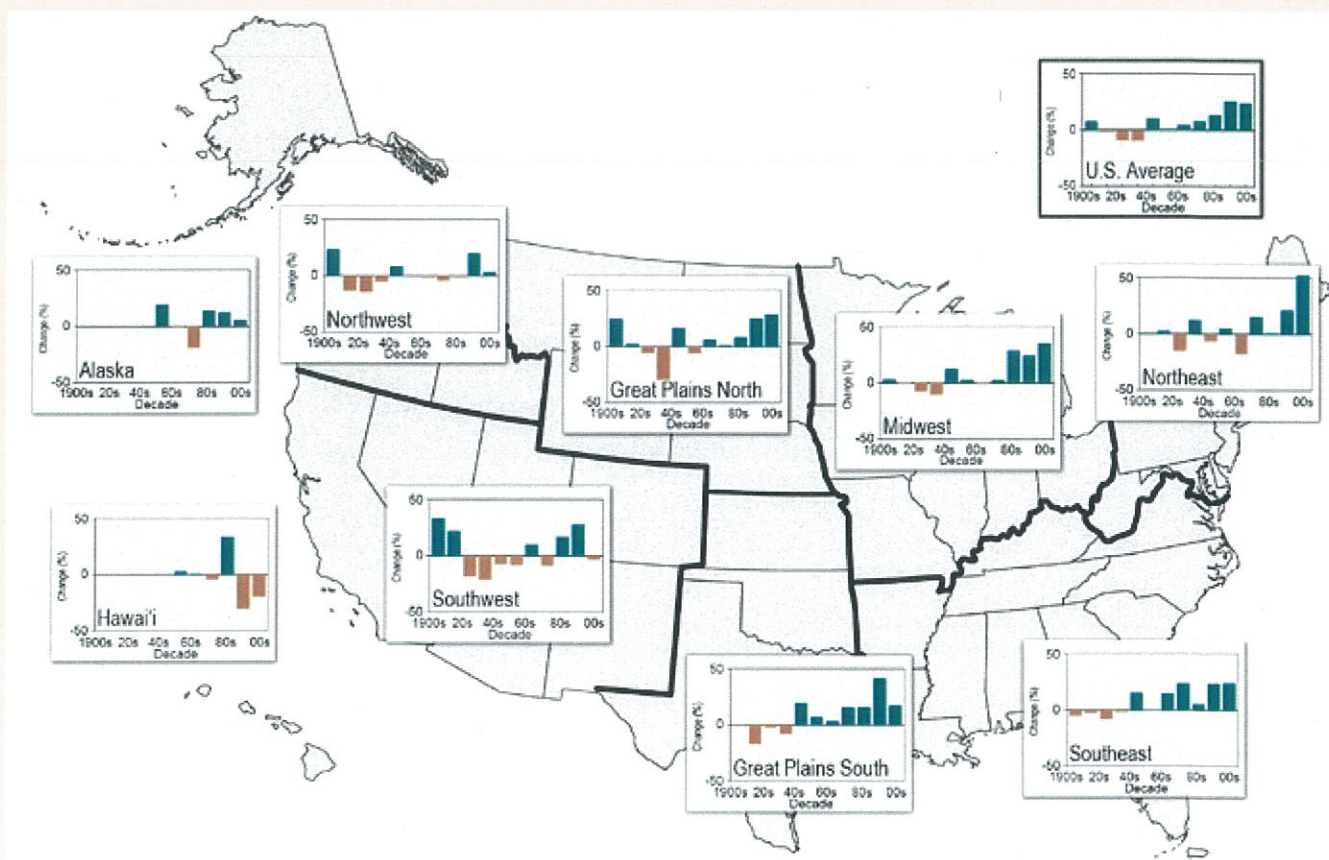


Figure 2.17. Percent changes in the annual amount of precipitation falling in very heavy events, defined as the heaviest 1% of all daily events from 1901 to 2012 for each region. The far right bar is for 2001-2012. In recent decades there have been increases nationally, with the largest increases in the Northeast, Great Plains, Midwest, and Southeast. Changes are compared to the 1901-1960 average for all regions except Alaska and Hawai'i, which are relative to the 1951-1980 average. (Figure source: NOAA NCDC / CICS-NC).

Warmer air can contain more water vapor than cooler air. Global analyses show that the amount of water vapor in the atmosphere has in fact increased over both land and oceans.^{14,51} Climate change also alters dynamical characteristics of the atmosphere that in turn affect weather patterns and storms. In the mid-latitudes, where most of the continental U.S. is located, there is an upward trend in extreme precipitation in the vicinity of fronts associated with mid-latitude storms.⁵² Locally, natural variations can also be important.⁵³

Projections of future climate over the U.S. suggest that the recent trend towards increased heavy precipitation events will continue. This is projected to occur even in regions where total precipitation is projected to decrease, such as the Southwest.^{52,54,55}



Observed Change in Very Heavy Precipitation

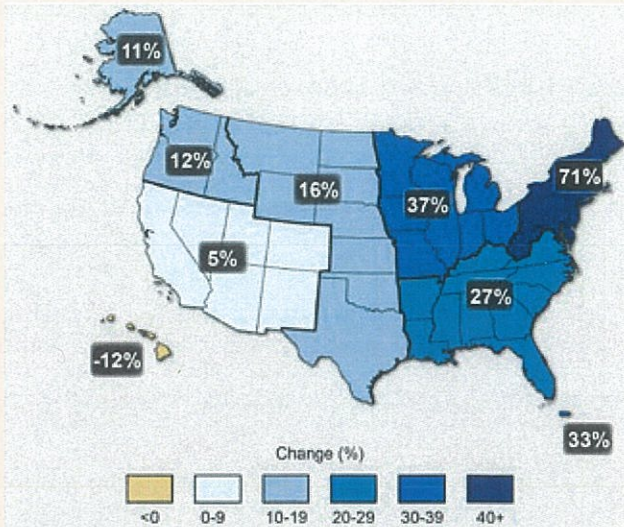


Figure 2.18. The map shows percent increases in the amount of precipitation falling in very heavy events (defined as the heaviest 1% of all daily events) from 1958 to 2012 for each region of the continental United States. These trends are larger than natural variations for the Northeast, Midwest, Puerto Rico, Southeast, Great Plains, and Alaska. The trends are not larger than natural variations for the Southwest, Hawai'i, and the Northwest. The changes shown in this figure are calculated from the beginning and end points of the trends for 1958 to 2012. (Figure source: updated from Karl et al. 2009¹).

Projected Change in Heavy Precipitation Events

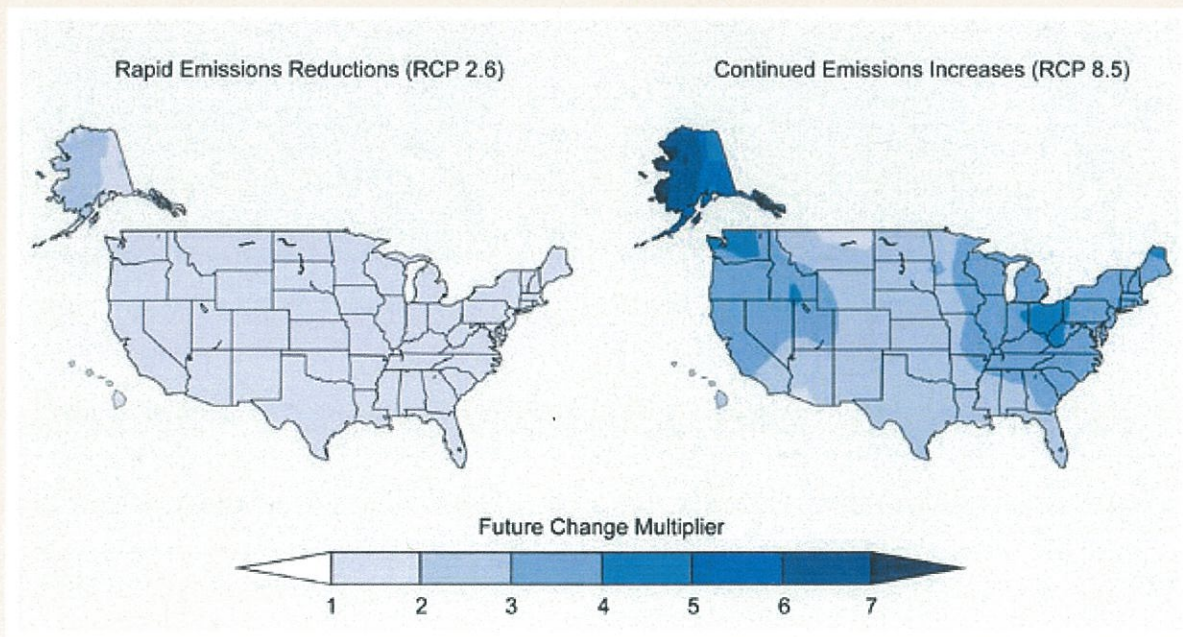


Figure 2.19. Maps show the increase in frequency of extreme daily precipitation events (a daily amount that now occurs once in 20 years) by the later part of this century (2081-2100) compared to the later part of last century (1981-2000). Such extreme events are projected to occur more frequently everywhere in the United States. Under the rapid emissions reduction scenario (RCP 2.6), these events would occur nearly twice as often. For the scenario assuming continued increases in emissions (RCP 8.5), these events would occur up to five times as often. (Figure source: NOAA NCDC / CICS-NC).

Key Message 7: Extreme Weather

There have been changes in some types of extreme weather events over the last several decades. Heat waves have become more frequent and intense, especially in the West. Cold waves have become less frequent and intense across the nation. There have been regional trends in floods and droughts. Droughts in the Southwest and heat waves everywhere are projected to become more intense, and cold waves less intense everywhere.

Heat waves are periods of abnormally hot weather lasting days to weeks.⁴⁸ Heat waves have generally become more frequent across the U.S. in recent decades, with western regions (including Alaska) setting records for numbers of these events in the 2000s. Tree ring data suggests that the drought over the last decade in the western U.S. represents the driest conditions in 800 years.^{1,56} Most other regions in the country had their highest number of short-duration heat waves in the 1930s, when the multi-year severe drought of the Dust Bowl period, combined with deleterious land-use practices,⁵⁷ contributed to the intense summer heat through depletion of soil moisture and reduction of the moderating effects of evaporation.⁵⁸ However, the recent prolonged (multi-month) extreme heat has been unprecedented since the start of reliable instrumental records in 1895. The recent heat waves and droughts in Texas (2011) and the Midwest (2012) set records for highest monthly average temperatures, exceeding in some cases records set in the 1930s, including the highest monthly contiguous U.S. temperature on record (July 2012, breaking the July 1936 record) and the hottest summers on record in several states (New Mexico, Texas, Oklahoma, and Louisiana in 2011 and Colorado and Wyoming in 2012). For the spring and summer months, 2012 had the second largest area of record-setting monthly average temperatures, including a 26-state area from Wyoming to the East Coast. The summer (June-August) temperatures of 2012 ranked in the hottest 10% of the 118-year period of record in 28 states covering the Rocky Mountain states, the Great Plains, the Upper Midwest, and the Northeast. The new records included both hot daytime maximum temperatures and warm nighttime minimum temperatures.⁵⁹ Corresponding with this increase in extreme heat, the number of extreme cold waves has reached the lowest levels on record (since 1895).

Many more high temperature records are being broken as compared to low temperature records over the past three to four decades – another indicator of a warming climate.⁶⁰ The number of record low monthly temperatures has declined to the lowest levels since 1911, while the number of record high monthly temperatures has increased to the highest level since the 1930s. During this same period, there has been an increasing trend in persistently high nighttime temperature.¹ There are various reasons why low temperatures have increased more than high temperatures.⁶¹

In some areas, prolonged periods of record high temperatures associated with droughts contribute to dry conditions that are driving wildfires.⁶² The meteorological situations that cause



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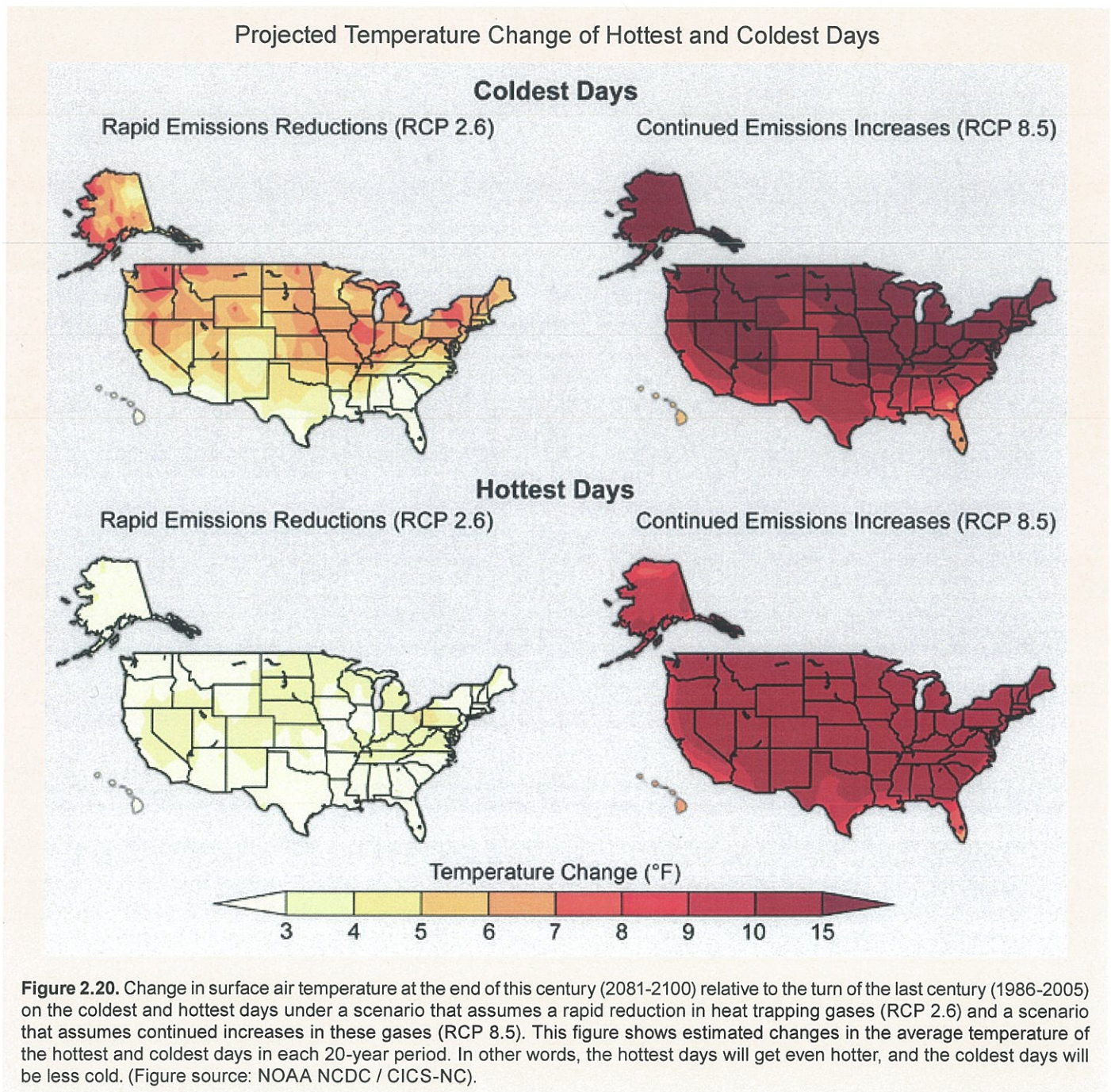
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heat waves are a natural part of the climate system. Thus the timing and location of individual events may be largely a natural phenomenon, although even these may be affected by human-induced climate change.⁶³ However, there is emerging evidence that most of the increases of heat wave severity over the U.S. are likely due to human activity,⁶⁴ with a detectable human influence in recent heat waves in the southern Great Plains^{1,65} as well as in Europe^{7,62} and Russia.^{60,66,67} The summer 2011 heat wave and drought in Texas was primarily driven by precipitation deficits, but the human contribution to climate change approximately doubled the probability that the heat was record-breaking.⁶⁸ So while an event such as this Texas heat wave and drought could be triggered by a naturally occurring event such as a deficit in precipitation, the chances for record-breaking temperature extremes has increased and will

continue to increase as the global climate warms. Generally, the changes in climate are increasing the likelihood for these types of severe events.

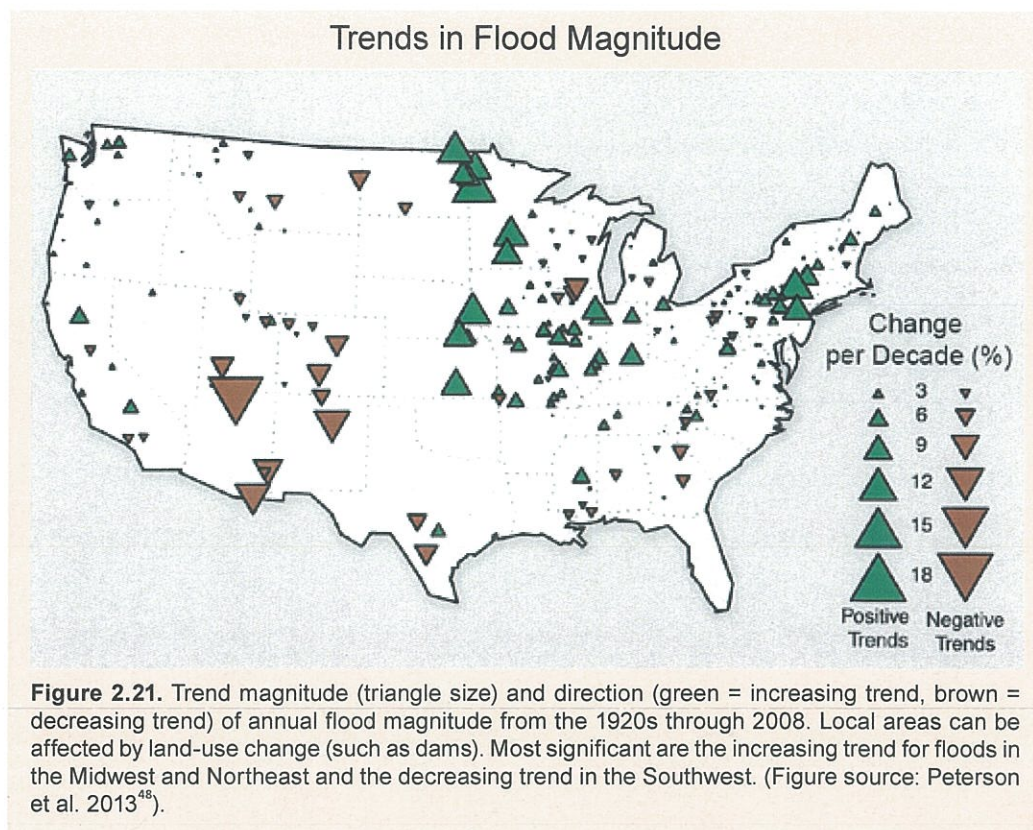
The number of extremely hot days is projected to continue to increase over much of the United States, especially by late century. Summer temperatures are projected to continue rising, and a reduction of soil moisture, which exacerbates heat waves, is projected for much of the western and central U.S. in summer. Climate models project that the same summertime

temperatures that ranked among the hottest 5% in 1950-1979 will occur at least 70% of the time by 2035-2064 in the U.S. if global emissions of heat-trapping gases continue to grow (as in the A2 scenario).⁶⁷ By the end of this century, what have previously been once-in-20-year extreme heat days (1-day events) are projected to occur every two or three years over most of the nation.^{69,70} In other words, what now seems like an extremely hot day will become commonplace.



There are significant trends in the magnitude of river flooding in many parts of the United States. When averaged over the entire nation, however, the increases and decreases cancel each other out and show no national level trend.⁷¹ River flood magnitudes have decreased in the Southwest and increased in the eastern Great Plains, parts of the Midwest, and from the northern Appalachians into New England.⁴⁸ Figure 2.21 shows increasing trends in floods in green and decreasing trends in brown. The magnitude of these trends is illustrated by the size of the triangles.

These regional river flood trends are qualitatively consistent with trends in climate conditions associated with flooding. For example, average annual precipitation has increased in the Midwest and Northeast and decreased in the Southwest (Figure 2.12).⁴⁸ Recent soil moisture trends show general drying in the Southwest and moistening in the Northeast and northern Great Plains and Midwest (Ch 3: Water, Figure 3.2). These trends are in general agreement with the flood trends. Although there is a strong national upward trend in extreme precipitation and not in river flooding, the regional variations are similar. Extreme precipitation has been increasing strongly in the Great Plains, Midwest, and Northeast, where river flooding increases have been observed, and there is little trend in the Southwest, where river flooding has decreased. An exact correspondence is not necessarily expected since the seasonal timing of precipitation events makes a difference in whether river flooding occurs. The increase in extreme precipitation events has been concentrated in the summer and fall⁵² when soil moisture is seasonally low and soils can absorb a greater fraction of rainfall. By contrast, many of the annual flood events occur in the spring when soil moisture is high. Thus, additional extreme rainfall events in summer and fall may not create sufficient runoff for the resulting streamflow to exceed spring flood magnitudes. However, these extreme precipitation events are often associated with local flash floods, a leading cause of death due to weather events (see “Flood Factors and Flood Types” in Ch. 3: Water).



Research into the effects of human-induced climate change on flood events is relatively new. There is evidence of a detectable human influence in recent flooding events in England and Wales¹³ and in other specific events around the globe during 2011.⁴⁸ In general, heavier rains lead to a larger fraction of rainfall running off and, depending on the surface conditions, more potential for flooding.

Higher temperatures lead to increased rates of evaporation, including more loss of moisture through plant leaves. Even in areas where precipitation does not decrease, these increases in surface evaporation and loss of water from plants lead to more rapid drying of soils if the effects of higher temperatures are not offset by other changes (such as in wind speed or humidity).⁷² As soil dries out, a larger proportion of the incoming heat from the sun goes into heating the soil and adjacent air rather than evaporating its moisture, resulting in hotter summers under drier climatic conditions.⁷³ Under higher emissions scenarios, widespread drought is projected to become more common over most of the central and southern United States.^{56,74,75,76,77}

Projected Changes in Soil Moisture for the Western U.S.

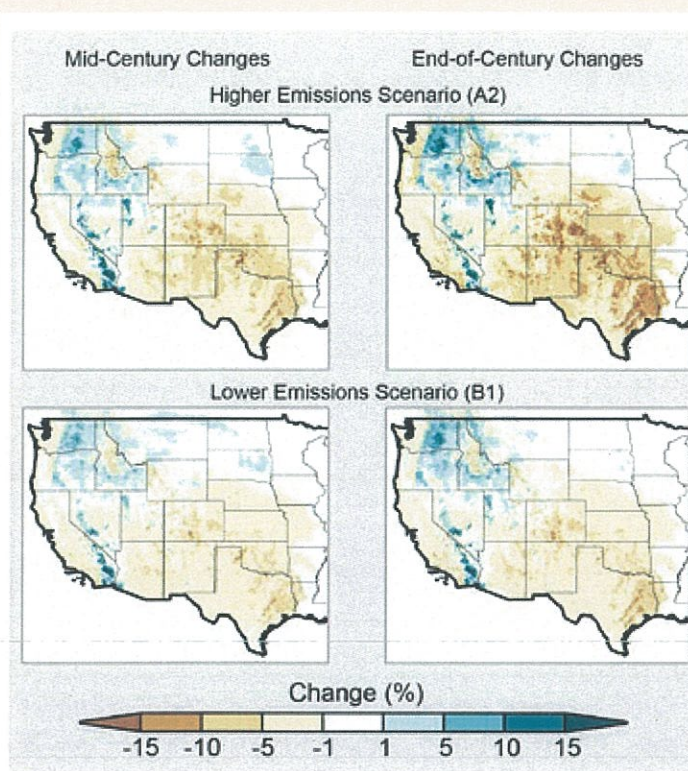


Figure 2.22. Average change in soil moisture compared to 1971–2000, as projected for the middle of this century (2041–2070) and late this century (2071–2100) under two emissions scenarios, a lower scenario (B1) and a higher scenario (A2).^{75,77} The future drying of soils in most areas simulated by this sophisticated hydrologic model (Variable Infiltration Capacity or VIC model) is consistent with the future drought increases using the simpler Palmer Drought Severity Index (PDSI) metric. Only the western U.S. is displayed because model simulations were only run for this area. (Figure source: NOAA NCDC / CICS-NC).

Key Message 8: Changes in Hurricanes

The intensity, frequency, and duration of North Atlantic hurricanes, as well as the frequency of the strongest (Category 4 and 5) hurricanes, have all increased since the early 1980s. The relative contributions of human and natural causes to these increases are still uncertain. Hurricane-associated storm intensity and rainfall rates are projected to increase as the climate continues to warm.

There has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s, the period during which high-quality satellite data are available.^{78,79} These include measures of intensity, frequency, and duration as well as the number of strongest (Category 4 and 5) storms. The ability to assess longer-term trends in hurricane activity is limited by the quality of available data. The historic record of Atlantic hurricanes dates back to the mid-1800s, and indicates other decades of high activity. However, there is considerable uncertainty in the record prior to the satellite era (early 1970s), and the further back in time one goes, the more uncertain the record becomes.⁷⁹

The recent increases in activity are linked, in part, to higher sea surface temperatures in the region that Atlantic hurricanes form in and move through. Numerous factors have been shown to influence these local sea surface temperatures, including natural variability, human-induced emissions of heat-trapping gases, and particulate pollution. Quantifying the relative con-

tributions of natural and human-caused factors is an active focus of research. Some studies suggest that natural variability, which includes the Atlantic Multidecadal Oscillation, is the dominant cause of the warming trend in the Atlantic since the 1970s,^{80,81} while others argue that human-caused heat-trapping gases and particulate pollution are more important.⁸²

Hurricane development, however, is influenced by more than just sea surface temperature. How hurricanes develop also depends on how the local atmosphere responds to changes in local sea surface temperatures, and this atmospheric response depends critically on the *cause* of the change.⁸³ For example, the atmosphere responds differently when local sea surface temperatures increase due to a local decrease of particulate pollution that allows more sunlight through to warm the ocean, versus when sea surface temperatures increase more uniformly around the world due to increased amounts of human-caused heat-trapping gases.^{80,84} So the link between hurricanes and ocean temperatures is complex. Improving our

Observed Trends in Hurricane Power Dissipation

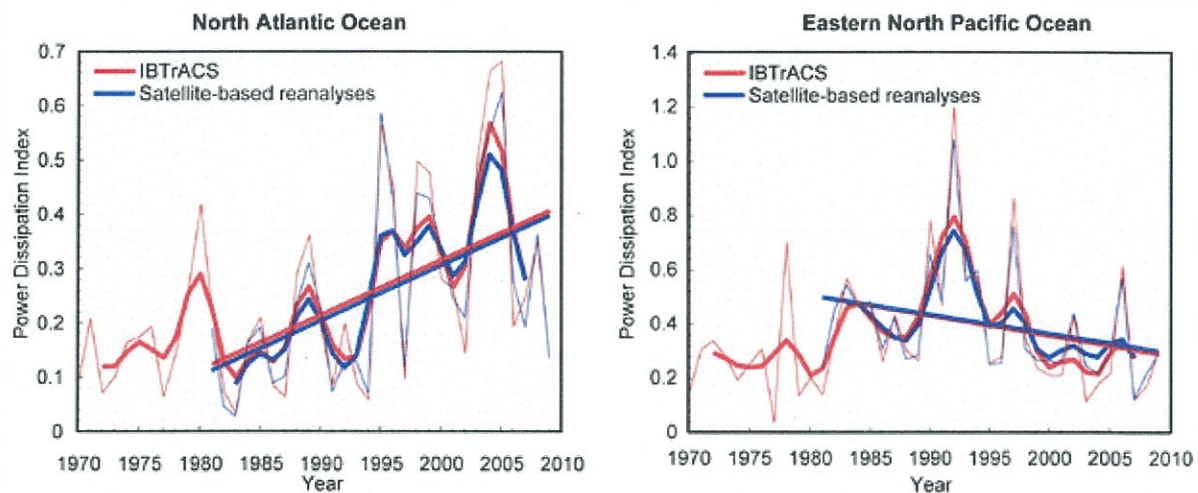


Figure 2.23. Recent variations of the Power Dissipation Index (PDI) in the North Atlantic and eastern North Pacific Oceans. PDI is an aggregate of storm intensity, frequency, and duration and provides a measure of total hurricane power over a hurricane season. There is a strong upward trend in Atlantic PDI, and a downward trend in the eastern North Pacific, both of which are well-supported by the reanalysis. Separate analyses (not shown) indicate a significant increase in the strength and in the number of the strongest hurricanes (Category 4 and 5) in the North Atlantic over this same time period. The PDI is calculated from historical data (IBTrACS⁹²) and from reanalyses using satellite data (UW/NCDC & ADT-HURSAT^{93,94}). IBTrACS is the International Best Track Archive for Climate Stewardship, UW/NCDC is the University of Wisconsin/NOAA National Climatic Data Center satellite-derived hurricane intensity dataset, and ADT-HURSAT is the Advanced Dvorak Technique–Hurricane Satellite dataset (Figure source: adapted from Kossin et al. 2007⁹³).

understanding of the relationships between warming tropical oceans and tropical cyclones is another active area of research.

Changes in the average length and positions of Atlantic storm tracks are also associated with regional climate variability.⁸⁵ The locations and frequency of storms striking land have been argued to vary in opposing ways than basin-wide frequency. For example, fewer storms have been observed to strike land during warmer years even though overall activity is higher than

average,⁸⁶ which may help to explain the lack of any clear trend in landfall frequency along the U.S. eastern and Gulf coasts.^{87,88} Climate models also project changes in hurricane tracks and where they strike land.⁸⁹ The specific characteristics of the changes are being actively studied.

Other measures of Atlantic storm activity are projected to change as well.^{87,90,91} By late this century, models, on average, project a slight decrease in the annual number of tropical

cyclones, but an increase in the number of the strongest (Category 4 and 5) hurricanes. These projected changes are based on an average of projections from a number of individual models, and they represent the most likely outcome. There is some uncertainty in this as the individual models do not always agree on the amount of projected change, and some models may project an increase where others project a decrease. The models are in better agreement when projecting changes in hurricane precipitation – almost all existing studies project greater rainfall rates in hurricanes in a warmer climate, with projected increases of about 20% averaged near the center of hurricanes.



North Atlantic hurricanes have increased in intensity, frequency, and duration since the early 1980s.

Key Message 9: Changes in Storms

Winter storms have increased in frequency and intensity since the 1950s, and their tracks have shifted northward over the United States. Other trends in severe storms, including the intensity and frequency of tornadoes, hail, and damaging thunderstorm winds, are uncertain and are being studied intensively.

Trends in the occurrences of storms, ranging from severe thunderstorms to winter storms to hurricanes, are subject to much greater uncertainties than trends in temperature and variables that are directly related to temperature (such as snow and ice cover, ocean heat content, and sea level). Recognizing that the impacts of changes in the frequency and intensity of these storms can easily exceed the impacts of changes in average

temperature or precipitation, climate scientists are actively researching the connections between climate change and severe storms. There has been a sizeable upward trend in the number of storms causing large financial and other losses.⁹⁵ However, there are societal contributions to this trend, such as increases in population and wealth.⁵²

Severe Convective Storms

Tornadoes and other severe thunderstorm phenomena frequently cause as much annual property damage in the U.S. as do hurricanes, and often cause more deaths. Recent research has yielded insights into the connections between global warming and the factors that cause tornadoes and severe

thunderstorms (such as atmospheric instability and increases in wind speed with altitude⁹⁶). Although these relationships are still being explored, a recent study suggests a projected increase in the frequency of conditions favorable for severe thunderstorms.⁹⁷

Winter Storms

For the entire Northern Hemisphere, there is evidence of an increase in both storm frequency and intensity during the cold season since 1950,⁹⁸ with storm tracks having shifted slightly towards the poles.^{99,100} Extremely heavy snowstorms increased in number during the last century in northern and eastern parts of the United States, but have been less frequent since 2000.^{52,101} Total seasonal snowfall has generally decreased in southern and some western areas,¹⁰² increased in the northern Great Plains and Great Lakes region,^{102,103} and not changed in other areas, such as the Sierra Nevada, although snow is melting earlier in the year and more precipitation is falling as rain versus snow.¹⁰⁴ Very snowy winters have generally been decreasing in frequency in most regions over the last 10 to 20

years, although the Northeast has been seeing a normal number of such winters.¹⁰⁵ Heavier-than-normal snowfalls recently observed in the Midwest and Northeast U.S. in some years, with little snow in other years, are consistent with indications of increased blocking (a large scale pressure pattern with little or no movement) of the wintertime circulation of the Northern Hemisphere.¹⁰⁶ However, conclusions about trends in blocking have been found to depend on the method of analysis,¹⁰⁷ so the assessment and attribution of trends in blocking remains an active research area. Overall snow cover has decreased in the Northern Hemisphere, due in part to higher temperatures that shorten the time snow spends on the ground.¹⁰⁸



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Variation of Storm Frequency and Intensity during the Cold Season (November – March)

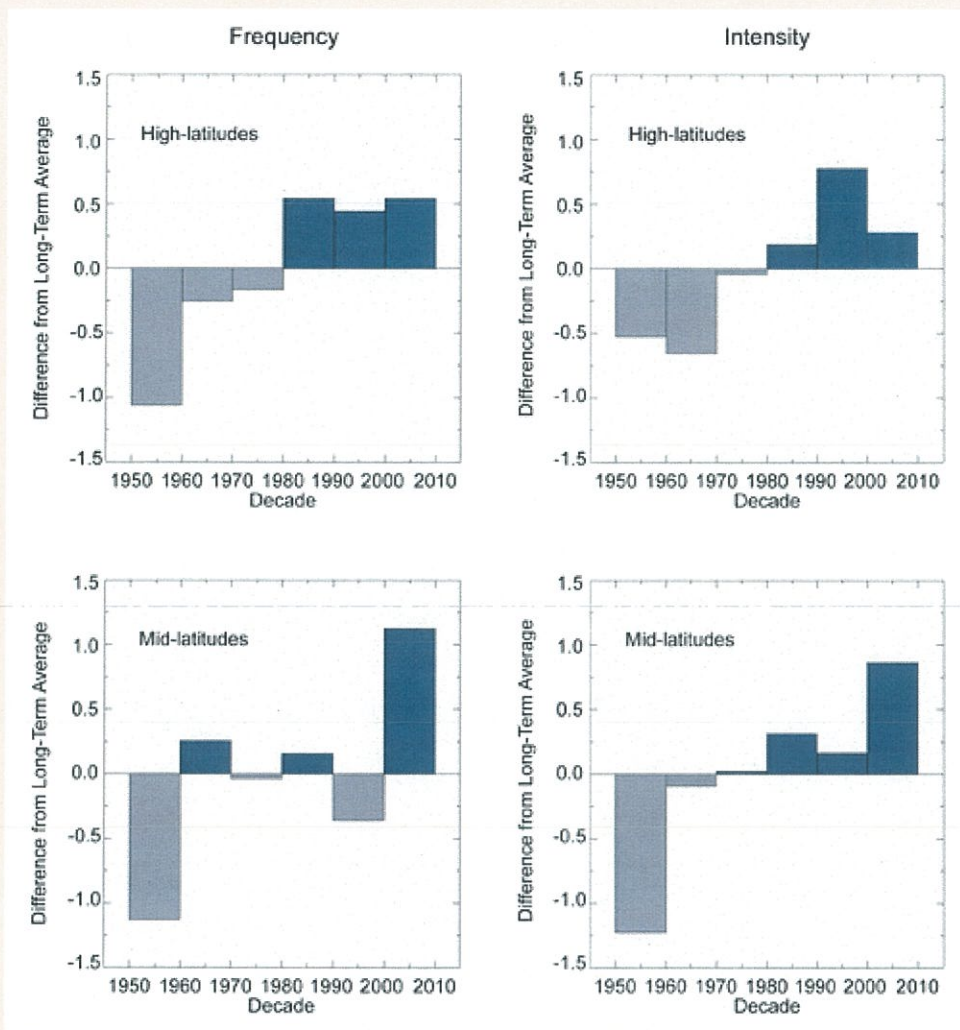


Figure 2.24. Variation of winter storm frequency and intensity during the cold season (November–March) for high latitudes (60–90°N) and mid-latitudes (30–60°N) of the Northern Hemisphere over the period 1949–2010. The bar for each decade represents the difference from the long-term average. Storm frequencies have increased in middle and high latitudes, and storm intensities have increased in middle latitudes. (Figure source: updated from CCSP 2008¹⁰⁹).

Key Message 10: Sea Level Rise

Global sea level has risen by about 8 inches since reliable record keeping began in 1880. It is projected to rise another 1 to 4 feet by 2100.

The oceans are absorbing over 90% of the increased atmospheric heat associated with emissions from human activity.¹¹⁰ Like mercury in a thermometer, water expands as it warms up (this is referred to as “thermal expansion”) causing sea levels to rise. Melting of glaciers and ice sheets is also contributing to sea level rise at increasing rates.¹¹¹

Since the late 1800s, tide gauges throughout the world have shown that global sea level has risen by about 8 inches. A new data set (Figure 2.25) shows that this recent rise is much greater than at any time in at least the past 2000 years.¹¹² Since 1992, the rate of global sea level rise measured by satellites has been roughly twice the rate observed over the last century, providing evidence of additional acceleration.¹¹³

Projecting future rates of sea level rise is challenging. Even the most sophisticated climate models, which explicitly represent Earth's physical processes, cannot simulate rapid changes in ice sheet dynamics, and thus are likely to underestimate future sea level rise. In recent years, "semi-empirical" methods have been developed to project future rates of sea level rise based on a simple statistical relationship between past rates of globally averaged temperature change and sea level rise. These models suggest a range of additional sea level rise from about 2 feet to as much as 6 feet by 2100, depending on emissions scenario.^{114,115,116,117}

It is not clear, however, whether these statistical relationships will hold in the future, or that they fully explain historical behavior.¹¹⁸ Regardless of the amount of change by 2100, however, sea level rise is expected to continue well beyond this century as a result of both past and future emissions from human activities.

Scientists are working to narrow the range of sea level rise projections for this century. Recent projections show that for even the lowest emissions scenarios, thermal expansion of ocean waters¹¹⁹ and the melting of small mountain glaciers¹²⁰ will result in 11 inches of sea level rise by 2100, even without any contribution from the ice sheets in Greenland and Antarctica. This suggests that about 1 foot of global sea level rise by 2100 is probably a realistic low end. On the high end, recent work suggests that 4 feet is plausible.^{22,115,121} In the context of risk-based analysis, some decision makers may wish to use a wider range of scenarios, from 8 inches to 6.6 feet by 2100.^{122,123} In particular, the high end of these scenarios may be useful for decision makers with a low tolerance for risk (see Figure 2.26 on global sea level rise).^{122,123} Although scientists cannot yet assign likelihood to any particular scenario, in gen-

eral, higher emissions scenarios that lead to more warming would be expected to lead to higher amounts of sea level rise.

Nearly 5 million people in the U.S. live within 4 feet of the local high-tide level (also known as mean higher high water). In the next several decades, storm surges and high tides could combine with sea level rise and land subsidence to further increase flooding in many of these regions.¹²⁴ Sea level rise will not stop in 2100 because the oceans take a very long time to respond to warmer conditions at the Earth's surface. Ocean waters will therefore continue to warm and sea level will continue to rise for many centuries at rates equal to or higher than that of the current century.¹²⁵ In fact, recent research has suggested that even present day carbon dioxide levels are sufficient to cause Greenland to melt completely over the next several thousand years.¹²⁶

North Atlantic Sea Level Change

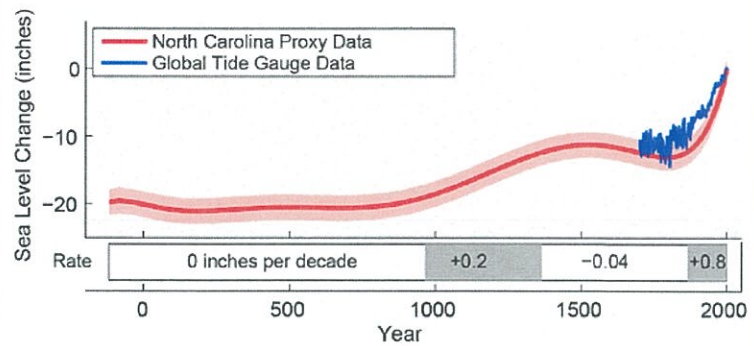


Figure 2.25. Sea level change in the North Atlantic Ocean relative to the year 2000 based on data collected from North Carolina¹¹² (red line, pink band shows the uncertainty range) compared with a reconstruction of global sea level rise based on tide gauge data from 1750 to present¹²⁷ (blue line). (Figure source: Adapted from Kemp et al. 2011¹¹²).

Past and Projected Changes in Global Sea Level Rise

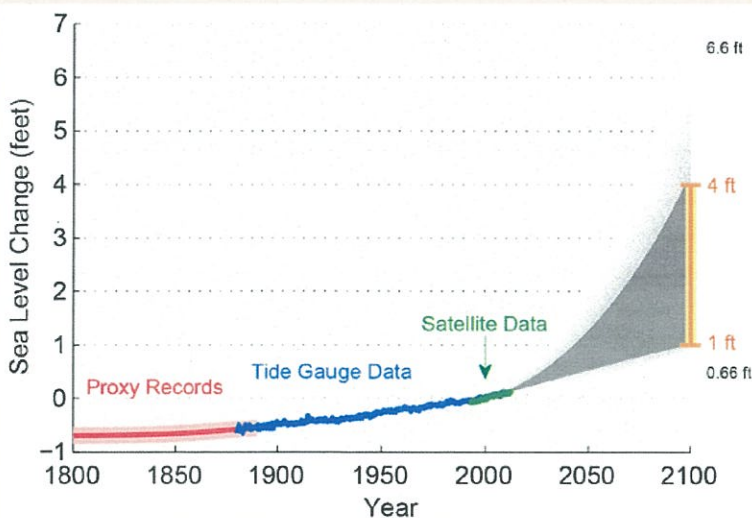


Figure 2.26. Estimated, observed, and possible future amounts of global sea level rise from 1800 to 2100, relative to the year 2000. Estimates from proxy data¹¹² (for example, based on sediment records) are shown in red (1800-1890, pink band shows uncertainty), tide gauge data are shown in blue for 1880-2009,¹¹³ and satellite observations are shown in green from 1993 to 2012.¹²⁸ The future scenarios range from 0.66 feet to 6.6 feet in 2100.¹²³ These scenarios are not based on climate model simulations, but rather reflect the range of possible scenarios based on other scientific studies. The orange line at right shows the currently projected range of sea level rise of 1 to 4 feet by 2100, which falls within the larger risk-based scenario range. The large projected range reflects uncertainty about how glaciers and ice sheets will react to the warming ocean, the warming atmosphere, and changing winds and currents. As seen in the observations, there are year-to-year variations in the trend. (Figure source: Adapted from Parris et al. 2012,¹²³ with contributions from NASA Jet Propulsion Laboratory).

Key Message 11: Melting Ice

Rising temperatures are reducing ice volume and surface extent on land, lakes, and sea. This loss of ice is expected to continue. The Arctic Ocean is expected to become essentially ice free in summer before mid-century.

Rising temperatures across the U.S. have reduced lake ice, sea ice, glaciers, and seasonal snow cover over the last few decades.¹¹¹ In the Great Lakes, for example, total winter ice coverage has decreased by 63% since the early 1970s.¹⁷² This includes the entire period since satellite data became available. When the record is extended back to 1963 using pre-satellite data,¹²⁹ the overall trend is less negative because the Great Lakes region experienced several extremely cold winters in the 1970s.

Sea ice in the Arctic has also decreased dramatically since the late 1970s, particularly in summer and autumn. Since the satellite record began in 1978, minimum Arctic sea ice extent (which occurs in early to mid-September) has decreased by more than 40%.¹³¹ This decline is unprecedented in the historical record, and the reduction of ice volume and thickness is even greater. Ice thickness decreased by more than 50% from 1958-1976 to 2003-2008,¹³² and the percentage of the March ice cover made up of thicker ice (ice that has survived a summer melt season) decreased from 75% in the mid-1980s to 45% in 2011.¹³³ Recent analyses indicate a decrease of 36% in autumn sea ice volume over the past decade.¹³⁴ The 2012 sea ice minimum broke the preceding record (set in 2007) by more than 200,000 square miles. Ice loss increases Arctic warming by replacing white, reflective ice with dark water that absorbs more energy from the sun. More open water can also increase snowfall over northern land areas¹³⁵ and increase the north-south meanders of the jet stream, consistent with the occurrence of unusually cold and snowy winters at mid-latitudes in several recent years.^{106,135} Significant uncertainties remain at this time in interpreting the effect of Arctic ice changes on mid-latitudes.¹⁰⁷

The loss of sea ice has been greater in summer than in winter. The Bering Sea, for example, has sea ice only in the winter-spring portion of the year, and shows no trend in surface area covered by ice over the past 30 years. However, seasonal ice in the Bering Sea and elsewhere in the Arctic is thin and susceptible to rapid melt during the following summer.

The seasonal pattern of observed loss of Arctic sea ice is generally consistent with simulations by global climate models, in which the extent of sea ice decreases more rapidly in summer

than in winter. However, the models tend to underestimate the amount of decrease since 2007. Projections by these models indicate that the Arctic Ocean is expected to become essentially ice-free in summer before mid-century under scenarios that assume continued growth in global emissions, although sea ice would still form in winter.^{136,137} Models that best match historical trends project a nearly sea ice-free Arctic in summer by the 2030s,¹³⁸ and extrapolation of the present observed trend suggests an even earlier ice-free Arctic in summer.¹³⁹ However, even during a long-term decrease, occasional temporary increases in Arctic summer sea ice can be expected over timescales of a decade or so because of natural variability.¹⁴⁰ The projected reduction of winter sea ice is only about 10% by 2030,¹⁴¹ indicating that the Arctic will shift to a more seasonal sea ice pattern. While this ice will be thinner, it will cover much of the same area now covered by sea ice in winter.

While the Arctic is an ocean surrounded by continents, Antarctica is a continent surrounded by ocean. Nearly all of the sea ice in the Antarctic melts each summer, and changes there are more complicated than in the Arctic. While Arctic sea ice has

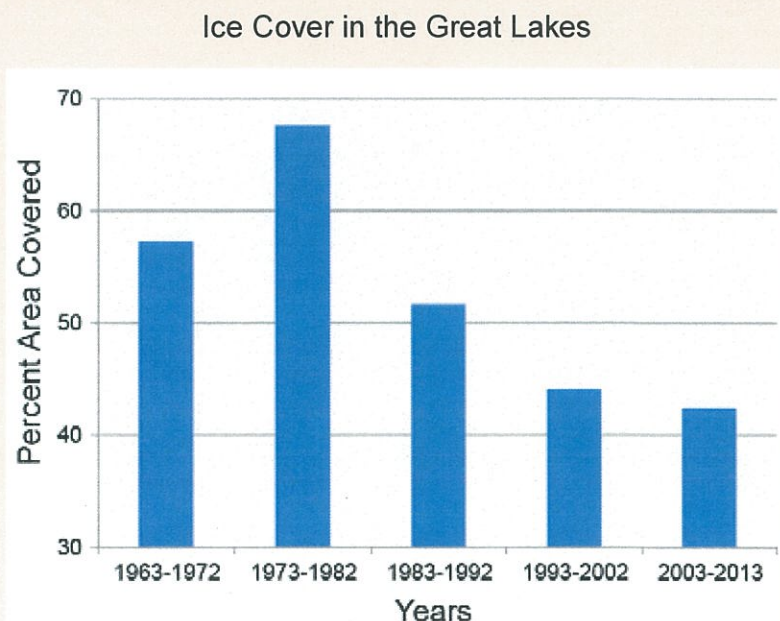


Figure 2.27. Bars show decade averages of annual maximum Great Lakes ice coverage from the winter of 1962-1963, when reliable coverage of the entire Great Lakes began, to the winter of 2012-2013. Bar labels indicate the end year of the winter; for example, 1963-1972 indicates the winter of 1962-1963 through the winter of 1971-1972. Only the most recent period includes the eleven years from 2003 to 2013. (Data updated from Bai and Wang, 2012¹³⁰).

Decline in Arctic Sea Ice Extent

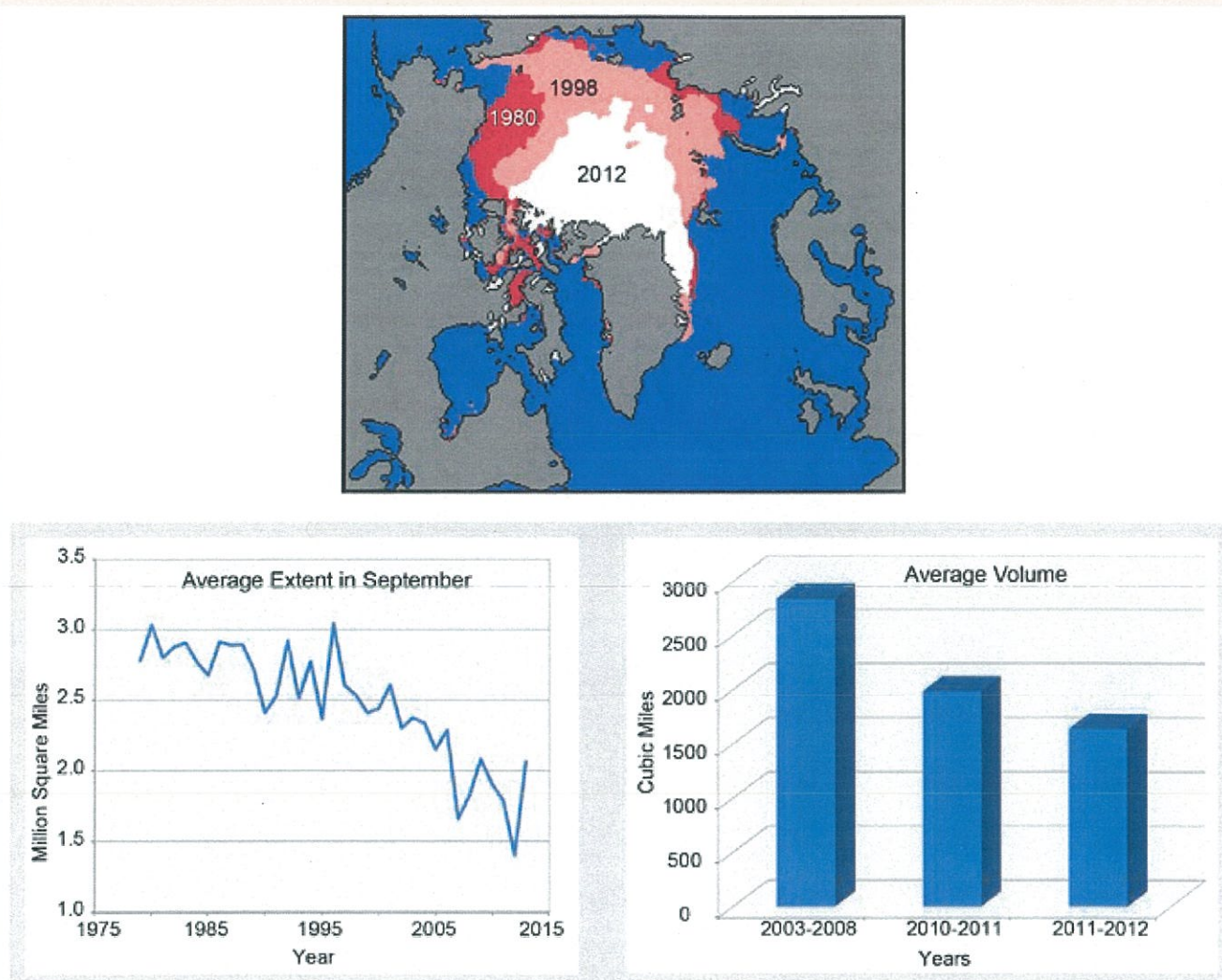


Figure 2.28. Summer Arctic sea ice has declined dramatically since satellites began measuring it in 1979. The extent of sea ice in September 2012, shown in white in the top figure, was more than 40% below the median for 1979-2000. The graph on the bottom left shows annual variations in September Arctic sea ice extent for 1979-2013. It is also notable that the ice has become much thinner in recent years, so its total volume (bottom right) has declined even more rapidly than the extent.¹¹¹ (Figure and data from National Snow and Ice Data Center).

been strongly decreasing, there has been a slight increase in sea ice in Antarctica.¹⁴² Explanations for this include changes in winds that directly affect ice drift as well as the properties of the surrounding ocean,¹⁴³ and that winds around Antarctica may have been affected by stratospheric ozone depletion.¹⁴⁴

Snow cover on land has decreased over the past several decades,¹⁴⁵ especially in late spring.¹⁴⁶ Each of five recent years (2008-2012) has set a new record for minimum snow extent in June in Eurasia, as did three of those five years in North America.

The surface of the Greenland Ice Sheet has been experiencing summer melting over increasingly large areas during the past several decades. In the decade of the 2000s, the daily melt area summed over the warm season was double the corresponding amounts of the 1970s,¹⁴⁷ culminating in summer surface melt that was far greater (97% of the Greenland Ice Sheet area) in 2012 than in any year since the satellite record began in 1979. More importantly, the rate of mass loss from the Greenland Ice Sheet's marine-terminating outlet glaciers has accelerated in recent decades, leading to predictions that the proportion of global sea level rise coming from Greenland will continue to increase.¹⁴⁸ Glaciers terminating on ice shelves and on land are also losing mass, but the rate of loss has not accelerated

over the past decade.¹⁴⁹ As discussed in Key Message 10, the dynamics of the Greenland Ice Sheet are generally not included in present global climate models and sea level rise projections.

Glaciers are retreating and/or thinning in Alaska and in the lower 48 states. In addition, permafrost temperatures are increasing over Alaska and much of the Arctic. Regions of discontinuous permafrost in interior Alaska (where annual average soil temperatures are already close to 32°F) are highly vulnerable to thaw. Thawing permafrost releases carbon dioxide and methane – heat-trapping gases that contribute to even more warming. Recent estimates suggest that the potential release of carbon from permafrost soils could add as much as 0.4°F to 0.6°F of warming by 2100.¹⁵⁰ Methane emissions have been detected from Alaskan lakes underlain by permafrost,¹⁵¹ and measurements suggest potentially even greater releases from thawing methane hydrates in the Arctic continental shelf of the East Siberian Sea.¹⁵² However, the response times of Arctic methane hydrates to climate change are quite long relative to methane's lifetime in the atmosphere (about a decade).¹⁵³ More generally, the importance of Arctic methane sources relative to other methane sources, such as wetlands in warmer climates, is largely unknown. The potential for a self-reinforcing feedback between permafrost thawing and additional warming contributes additional uncertainty to the high end of the range of future warm-

Projected Arctic Sea Ice Decline

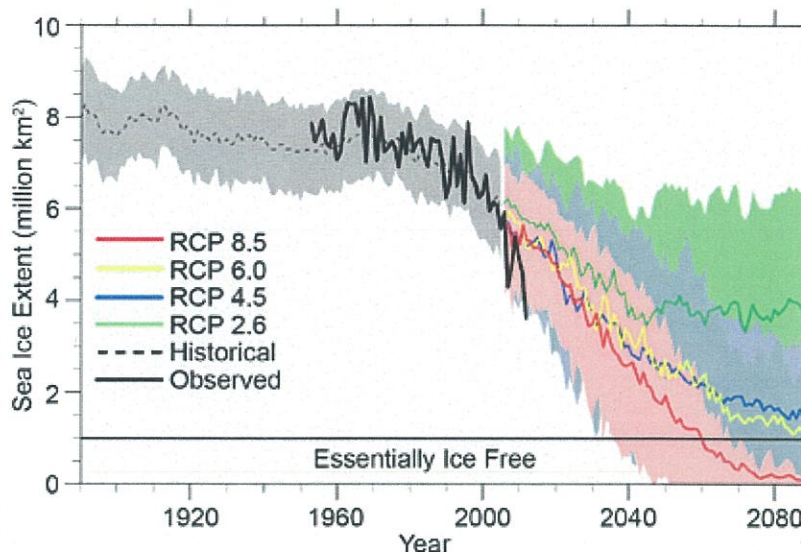


Figure 2.29. Model simulations of Arctic sea ice extent for September (1900–2100) based on observed concentrations of heat-trapping gases and particles (through 2005) and four scenarios. Colored lines for RCP scenarios are model averages (CMIP5) and lighter shades of the line colors denote ranges among models for each scenario. Dotted gray line and gray shading denotes average and range of the historical simulations through 2005. The thick black line shows observed data for 1953–2012. These newer model (CMIP5) simulations project more rapid sea ice loss compared to the previous generation of models (CMIP3) under similar forcing scenarios, although the simulated September ice losses under all scenarios still lag the observed loss of the past decade. Extrapolation of the present observed trend suggests an essentially ice-free Arctic in summer before mid-century.¹³⁹ The Arctic is considered essentially ice-free when the areal extent of ice is less than one million square kilometers. (Figure source: adapted from Stroeve et al. 2012¹³⁶).

ing. The projections of future climate shown throughout this report do not include the additional increase in temperature associated with this thawing.

Key Message 12: Ocean Acidification

The oceans are currently absorbing about a quarter of the carbon dioxide emitted to the atmosphere annually and are becoming more acidic as a result, leading to concerns about intensifying impacts on marine ecosystems.

As human-induced emissions of carbon dioxide (CO₂) build up in the atmosphere, excess CO₂ is dissolving into the oceans where it reacts with seawater to form carbonic acid, lowering ocean pH levels (“acidification”) and threatening a number of marine ecosystems.¹⁵⁴ Currently, the oceans absorb about a quarter of the CO₂ humans produce every year.¹⁵⁵ Over the last 250 years, the oceans have absorbed 560 billion tons of CO₂, increasing the acidity of surface waters by 30%.^{156,157,158} Although the average oceanic pH can vary on interglacial timescales,¹⁵⁶ the current observed rate of change is roughly 50

times faster than known historical change.^{159,160} Regional factors such as coastal upwelling,¹⁶¹ changes in discharge rates from rivers and glaciers,¹⁶² sea ice loss,¹⁶³ and urbanization¹⁶⁴ have created “ocean acidification hotspots” where changes are occurring at even faster rates.

The acidification of the oceans has already caused a suppression of carbonate ion concentrations that are critical for marine calcifying animals such as corals, zooplankton, and shellfish. Many of these animals form the foundation of the marine food

web. Today, more than a billion people worldwide rely on food from the ocean as their primary source of protein. Ocean acidification puts this important resource at risk.

Observations have shown that the north-eastern Pacific Ocean, including the Arctic and sub-Arctic seas, is particularly susceptible to significant shifts in pH and calcium carbonate saturation levels. Recent analyses show that large areas of the oceans along the U.S. west coast,^{157,165} the Bering Sea, and the western Arctic Ocean^{158,166} will become difficult for calcifying animals within the next 50 years. In particular, animals that form calcium carbonate shells, including corals, crabs, clams, oysters, and tiny free-swimming snails called pteropods, could be particularly vulnerable, especially during the larval stage.^{167,168,169}

Projections indicate that in higher emissions pathways, such as SRES A2 or RCP 8.5, current pH could be reduced from the current level of 8.1 to as low as 7.8 by the end of the century.¹⁵⁸ Such large changes in ocean pH have probably not been experienced on the planet for the past 100 million years, and it is unclear whether and how quickly ocean life could adapt to such rapid acidification.¹⁵⁹

As Oceans Absorb CO₂, They Become More Acidic

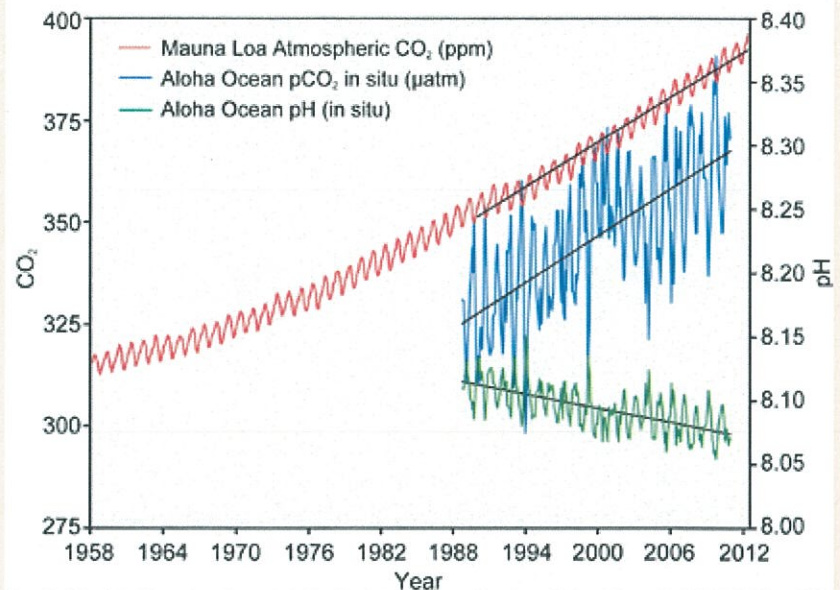


Figure 2.30. The correlation between rising levels of CO₂ in the atmosphere (red) at Mauna Loa and rising CO₂ levels (blue) and falling pH (green) in the nearby ocean at Station Aloha. As CO₂ accumulates in the ocean, the water becomes more acidic (the pH declines). (Figure source: modified from Feely et al. 2009¹⁵⁷).

Shells Dissolve in Acidified Ocean Water

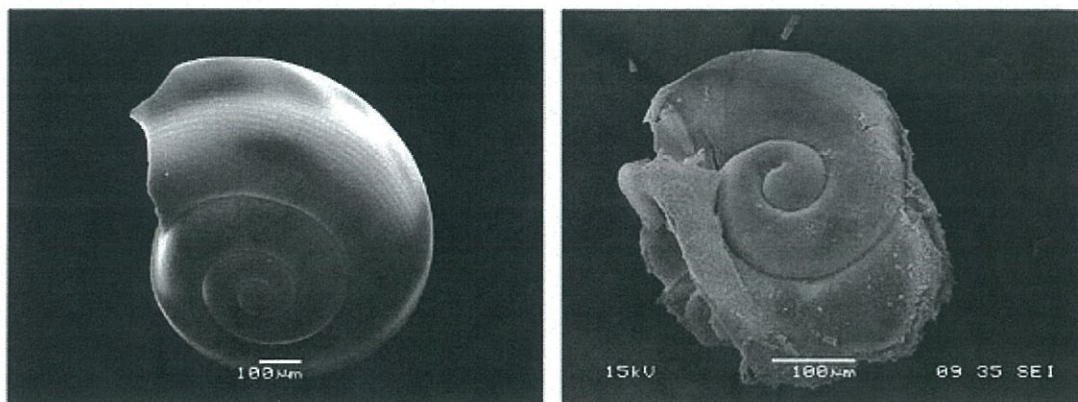


Figure 2.31. Pteropods, or “sea butterflies,” are free-swimming sea snails about the size of a small pea. Pteropods are eaten by marine species ranging in size from tiny krill to whales and are an important source of food for North Pacific juvenile salmon. The photos above show what happens to a pteropod’s shell in seawater that is too acidic. The left panel shows a shell collected from a live pteropod from a region in the Southern Ocean where acidity is not too high. The shell on the right is from a pteropod collected in a region where the water is more acidic (Photo credits: (left) Bednaršek et al. 2012;¹⁶⁸ (right) Nina Bednaršek).

2: OUR CHANGING CLIMATE

REFERENCES

- Karl, T. R., J. T. Melillo, and T. C. Peterson, Eds., 2009: *Global Climate Change Impacts in the United States*. Cambridge University Press, 189 pp. [Available online at <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>]
- Meehl, G. A., W. M. Washington, T. M. L. Wigley, J. M. Arblaster, and A. Dai, 2003: Solar and greenhouse gas forcing and climate response in the twentieth century. *Journal of Climate*, **16**, 426-444, doi:10.1175/1520-0442(2003)016<0426:saggfa>2.0.co;2. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/1520-0442%282003%29016%3C0426%3ASAGGFA%3E2.0.CO%3B2>]
- Kennedy, J. J., P. W. Thorne, T. C. Peterson, R. A. Reudy, P. A. Stott, D. E. Parker, S. A. Good, H. A. Titchner, and K. M. Willett, 2010: How do we know the world has warmed? [in "State of the Climate in 2009"]. *Bulletin of the American Meteorological Society*, **91**, S26-27, doi:10.1175/BAMS-91-7-StateoftheClimate. [Available online at <http://journals.ametsoc.org/doi/abs/10.1175/BAMS-91-7-StateoftheClimate>]
- Alexander, L. V., X. Zhang, T. C. Peterson, J. Caesar, B. Gleason, A. M. G. Klein Tank, M. Haylock, D. Collins, B. Trewin, F. Rahimzadeh, A. Tagipour, K. Rupa Kumar, J. Revadekar, G. Griffiths, L. Vincent, D. B. Stephenson, J. Burn, E. Aguilar, M. Brunet, M. Taylor, M. New, P. Zhai, M. Rusticucci, and J. L. Vazquez-Aguirre, 2006: Global observed changes in daily climate extremes of temperature and precipitation. *Journal of Geophysical Research*, **111**, 22, doi:10.1029/2005JD006290. [Available online at <http://www.agu.org/journals/jd/jd0605/2005JD006290/2005JD006290.pdf>]
- Gillett, N. P., V. K. Arora, G. M. Flato, J. F. Scinocca, and K. von Salzen, 2012: Improved constraints on 21st-century warming derived using 160 years of temperature observations. *Geophysical Research Letters*, **39**, 5, doi:10.1029/2011GL050226. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2011GL050226/pdf>]
- Santer, B. D., J. F. Painter, C. A. Mears, C. Doutriaux, P. Caldwell, J. M. Arblaster, P. J. Cameron-Smith, N. P. Gillett, P. J. Gleckler, J. Lanzante, J. Perlwitz, S. Solomon, P. A. Stott, K. E. Taylor, L. Terray, P. W. Thorne, M. F. Wehner, F. J. Wentz, T. M. L. Wigley, L. J. Wilcox, and C.-Z. Zou, 2013: Identifying human influences on atmospheric temperature. *Proceedings of the National Academy of Sciences*, **110**, 26-33, doi:10.1073/pnas.1210514109. [Available online at <http://www.pnas.org/content/110/1/26.full.pdf+html>]
- Stott, P. A., N. P. Gillett, G. C. Hegerl, D. J. Karoly, D. A. Stone, X. Zhang, and F. Zwiers, 2010: Detection and attribution of climate change: A regional perspective. *Wiley Interdisciplinary Reviews: Climate Change*, **1**, 192-211, doi:10.1002/wcc.34.
- IPCC, 2007: Summary for Policymakers. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor, and H. L. Miller, Eds., Cambridge University Press, 1-18. [Available online at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>]
- Wigley, T. M. L., and B. D. Santer, 2013: A probabilistic quantification of the anthropogenic component of twentieth century global warming. *Climate Dynamics*, **40**, 1087-1102, doi:10.1007/s00382-012-1585-8.
- Ashley, W. S., M. L. Bentley, and J. A. Stallins, 2012: Urban-induced thunderstorm modification in the Southeast United States. *Climatic Change*, **113**, 481-498, doi:10.1007/s10584-011-0324-1.
- DeAngelis, A., F. Dominguez, Y. Fan, A. Robock, M. D. Kustu, and D. Robinson, 2010: Evidence of enhanced precipitation due to irrigation over the Great Plains of the United States. *Journal of Geophysical Research*, **115**, D15115, doi:10.1029/2010JD013892.
- Degu, A. M., F. Hossain, D. Niyogi, R. Pielke, Sr., J. M. Shepherd, N. Voisin, and T. Chronis, 2011: The influence of large dams on surrounding climate and precipitation patterns. *Geophysical Research Letters*, **38**, L04405, doi:10.1029/2010gl046482. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2010GL046482/pdf>]
- Lo, M.-H., and J. S. Famiglietti, 2013: Irrigation in California's Central Valley strengthens the southwestern U.S. water cycle. *Geophysical Research Letters*, **40**, 301-306, doi:10.1002/grl.50108. [Available online at <http://onlinelibrary.wiley.com/doi/10.1002/grl.50108/pdf>]
- PAGES 2K Consortium, 2013: Continental-scale temperature variability during the past two millennia. *Nature Geoscience*, **6**, 339-346, doi:10.1038/ngeo1797.
- Mann, M. E., Z. Zhang, M. K. Hughes, R. S. Bradley, S. K. Miller, S. Rutherford, and F. Ni, 2008: Proxy-based reconstructions of hemispheric and global surface temperature variations over the past two millennia. *Proceedings of the National Academy of Sciences*, **105**, 13252-13257, doi:10.1073/pnas.0805721105. [Available online at <http://www.jstor.org/stable/pdfplus/25464030.pdf>]
- Min, S. K., X. Zhang, F. W. Zwiers, and G. C. Hegerl, 2011: Human contribution to more-intense precipitation extremes. *Nature*, **470**, 378-381, doi:10.1038/nature09763. [Available online at <http://www.nature.com/nature/journal/v470/n7334/abs/nature09763.html>]
- Pall, P., T. Aina, D. A. Stone, P. A. Stott, T. Nozawa, A. G. J. Hilberts, D. Lohmann, and M. R. Allen, 2011: Anthropogenic greenhouse gas contribution to flood risk in England and Wales in autumn 2000. *Nature*, **470**, 382-385, doi:10.1038/nature09762. [Available online at <http://www.nature.com/nature/journal/v470/n7334/abs/nature09762.html>]
- Santer, B. D., C. Mears, F. J. Wentz, K. E. Taylor, P. J. Gleckler, T. M. L. Wigley, T. P. Barnett, J. S. Boyle, W. Brüggemann, N. P. Gillett, S. A. Klein, G. A. Meehl, T. Nozawa, D. W. Pierce, P. A. Stott, W. M. Washington, and M. F. Wehner, 2007: Identification of human-induced changes in atmospheric moisture content. *Proceedings of the National Academy of Sciences*, **104**, 15248-15253, doi:10.1073/pnas.0702872104. [Available online at <http://sa.indiaenvironmentportal.org.in/files/file/PNAS-2007-Santer-15248-53.pdf>]
- Willett, K. M., N. P. Gillett, P. D. Jones, and P. W. Thorne, 2007: Attribution of observed surface humidity changes to human influence. *Nature*, **449**, 710-712, doi:10.1038/nature06207.
- Gillett, N. P., and P. A. Stott, 2009: Attribution of anthropogenic influence on seasonal sea level pressure. *Geophysical Research Letters*, **36**, L23709, doi:10.1029/2009GL041269. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009GL041269/pdf>]

17. AchutaRao, K. M., B. D. Santer, P. J. Gleckler, K. E. Taylor, D. W. Pierce, T. P. Barnett, and T. M. L. Wigley, 2006: Variability of ocean heat uptake: Reconciling observations and models. *Journal of Geophysical Research*, **111**, 20, doi:10.1029/2005jc003136.
18. Deser, C., R. Knutti, S. Solomon, and A. S. Phillips, 2012: Communication of the role of natural variability in future North American climate. *Nature Climate Change*, **2**, 775-779, doi:10.1038/nclimate1562. [Available online at http://www.nature.com/nclimate/journal/v2/n11/full/nclimate1562.html?WT.ec_id=NCLIMATE-201211]
19. Easterling, D. R., and M. F. Wehner, 2009: Is the climate warming or cooling? *Geophysical Research Letters*, **36**, 3, doi:10.1029/2009GL037810. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009GL037810/pdf>]
20. Foster, G., and S. Rahmstorf, 2011: Global temperature evolution 1979-2010. *Environmental Research Letters*, **6**, 044022, doi:10.1088/1748-9326/6/4/044022. [Available online at http://iopscience.iop.org/1748-9326/6/4/044022/pdf/1748-9326_6_4_044022.pdf]
21. Knight, J., J. J. Kennedy, C. Folland, G. Harris, G. S. Jones, M. Palmer, D. Parker, A. Scaife, and P. Stott, 2009: Do global temperature trends over the last decade falsify climate predictions? [in "State of the Climate in 2008"]. *Bulletin of the American Meteorological Society*, **90**, S22-S23, doi:10.1175/BAMS-90-8-StateoftheClimate. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-90-8-StateoftheClimate>]
- Santer, B. D., C. Mears, C. Doutriaux, P. Caldwell, P. J. Gleckler, T. M. L. Wigley, S. Solomon, N. P. Gillett, D. Ivanova, T. R. Karl, J. R. Lanzante, G. A. Meehl, P. A. Stott, K. E. Taylor, P. W. Thorne, M. F. Wehner, and F. J. Wentz, 2011: Separating signal and noise in atmospheric temperature changes: The importance of timescale. *Journal of Geophysical Research*, **116**, 1-19, doi:10.1029/2011JD016263. [Available online at <http://xa.yimg.com/kq/groups/18383638/1244615018/name/2011JD016263.pdf>]
22. Rahmstorf, S., M. Perrette, and M. Vermeer, 2012: Testing the robustness of semi-empirical sea level projections. *Climate Dynamics*, **39**, 861-875, doi:10.1007/s00382-011-1226-7.
23. Liebmann, B., R. M. Dole, C. Jones, I. Bladé, and D. Allured, 2010: Influence of choice of time period on global surface temperature trend estimates. *Bulletin of the American Meteorological Society*, **91**, 1485-1491, doi:10.1175/2010BAMS3030.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2010BAMS3030.1>]
24. Hansen, J., M. Sato, P. Kharecha, and K. von Schuckmann, 2011: Earth's energy imbalance and implications. *Atmospheric Chemistry and Physics*, **11**, 13421-13449, doi:10.5194/acp-11-13421-2011. [Available online at <http://www.atmos-chem-phys.net/11/13421/2011/acp-11-13421-2011.pdf>]
25. Bourassa, A. E., A. Robock, W. J. Randel, T. Deshler, L. A. Rieger, N. D. Lloyd, E. J. Llewellyn, and D. A. Degenstein, 2012: Large volcanic aerosol load in the stratosphere linked to Asian monsoon transport. *Science*, **337**, 78-81, doi:10.1126/science.1219371. [Available online at <http://www.sciencemag.org/content/337/6090/78.abstract>]
- , 2013: Response to Comments on "Large volcanic aerosol load in the stratosphere linked to Asian monsoon transport". *Science*, **339**, 647, doi:10.1126/science.1227961. [Available online at <http://www.sciencemag.org/content/339/6120/647.5.abstract>]
- Solomon, S., J. S. Daniel, R. R. Neely, J.-P. Vernier, E. G. Dutton, and L. W. Thomason, 2011: The persistently variable "background" stratospheric aerosol layer and global climate change. *Science*, **333**, 866-870, doi:10.1126/science.1206027.
26. Hansen, J., P. Kharecha, and M. Sato, 2013: Climate forcing growth rates: Doubling down on our Faustian bargain. *Environmental Research Letters*, **8**, 011006, doi:10.1088/1748-9326/8/1/011006. [Available online at http://iopscience.iop.org/1748-9326/8/1/011006/pdf/1748-9326_8_1_011006.pdf]
27. Balmaseda, M. A., K. E. Trenberth, and E. Källén, 2013: Distinctive climate signals in reanalysis of global ocean heat content. *Geophysical Research Letters*, **40**, 1754-1759, doi:10.1002/grl.50382. [Available online at <http://onlinelibrary.wiley.com/doi/10.1002/grl.50382/pdf>]
28. Meehl, G. A., J. M. Arblaster, J. T. Fasullo, A. Hu, and K. E. Trenberth, 2011: Model-based evidence of deep-ocean heat uptake during surface-temperature hiatus periods. *Nature Climate Change*, **1**, 360-364, doi:10.1038/nclimate1229. [Available online at <http://www.nature.com/nclimate/journal/v1/n7/pdf/nclimate1229.pdf>]
29. Huber, M., and R. Knutti, 2012: Anthropogenic and natural warming inferred from changes in Earth's energy balance. *Nature Geoscience*, **5**, 31-36, doi:10.1038/ngeo1327. [Available online at <http://www.nature.com/ngeo/journal/v5/n1/pdf/ngeo1327.pdf>]
30. Matthews, H. D., and K. Zickfeld, 2012: Climate response to zeroed emissions of greenhouse gases and aerosols. *Nature Climate Change*, **2**, 338-341, doi:10.1038/nclimate1424. [Available online at <http://www.nature.com/nclimate/journal/v2/n5/full/nclimate1424.html>]
31. Hawkins, E., and R. Sutton, 2011: The potential to narrow uncertainty in projections of regional precipitation change. *Climate Dynamics*, **37**, 407-418, doi:10.1007/s00382-010-0810-6.
32. Taylor, K. E., R. J. Stouffer, and G. A. Meehl, 2012: An overview of CMIP5 and the experiment design. *Bulletin of the American Meteorological Society*, **93**, 485, doi:10.1175/BAMS-D-11-00094.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-11-00094.1>]
33. Schnelhuber, H. J., W. P. Cramer, N. Nakicenovic, T. Wigley, and G. Yohe, 2006: *Avoiding Dangerous Climate Change*. Cambridge University Press.
34. Boberg, F., P. Berg, P. Thejll, W. Gutowski, and J. Christensen, 2009: Improved confidence in climate change projections of precipitation evaluated using daily statistics from the PRUDENCE ensemble. *Climate Dynamics*, **32**, 1097-1106, doi:10.1007/s00382-008-0446-y. [Available online at <http://link.springer.com/content/pdf/10.1007%2Fs00382-008-0446-y.pdf>]
- Gutowski, W. J., E. S. Takle, K. A. Kozak, J. C. Patton, R. W. Arritt, and J. H. Christensen, 2007: A possible constraint on regional precipitation intensity changes under global warming. *Journal of Hydrometeorology*, **8**, 1382-1396, doi:10.1175/2007jhm817.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2007JHM817.1>]
- Sillmann, J., V. V. Kharin, F. W. Zwiers, X. Zhang, and D. Bronaugh, 2013: Climate extremes indices in the CMIP5 multimodel ensemble: Part 2. Future climate projections. *Journal of Geophysical Research: Atmospheres*, **118**, 2473-2493, doi:10.1002/jgrd.50188. [Available online at <http://onlinelibrary.wiley.com/doi/10.1002/jgrd.50188/pdf>]

- Sun, Y., S. Solomon, A. Dai, and R. W. Portmann, 2007: How often will it rain? *Journal of Climate*, **20**, 4801-4818, doi:10.1175/jcli4263.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI4263.1>]
35. IPCC, 2007: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor, and H. L. Miller, Eds. Cambridge University Press, 996 pp. [Available online at http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.html]
 - Collins, M., R. Knutti, J. M. Arblaster, J.-L. Dufresne, T. Fifehet, F. P. X. Gao, W. J. Gutowski, T. Johns, G. Krinner, M. Shongwe, C. Tebaldi, A. J. Weaver, and M. Wehner, 2013: Ch. 12: Long-term climate change: Projections, commitments and irreversibility. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, T. F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, Nauels, Y. Xia, V. Bex, and P. M. Midgley, Eds., Cambridge University Press, 1029-1136. [Available online at <http://www.climatechange2013.org/report/review-drafts/>]
 36. Fall, S., D. Niyogi, A. Gluhovsky, R. A. Pielke, Sr., E. Kalnay, and G. Rochon, 2010: Impacts of land use land cover on temperature trends over the continental United States: Assessment using the North American Regional Reanalysis. *International Journal of Climatology*, **30**, 1980-1993, doi:10.1002/joc.1996. [Available online at <http://onlinelibrary.wiley.com/doi/10.1002/joc.1996/pdf>]
 - Menne, M. J., C. N. Williams, Jr., and M. A. Palecki, 2010: On the reliability of the U.S. surface temperature record. *Journal of Geophysical Research*, **115**, 9, doi:10.1029/2009JD013094. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009JD013094/pdf>]
 - Menne, M. J., C. N. Williams, Jr., and R. S. Vose, 2009: The US Historical Climatology Network monthly temperature data, version 2. *Bulletin of the American Meteorological Society*, **90**, 993-1007, doi:10.1175/2008BAMS2613.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2008BAMS2613.1>]
 - Menne, M. J., and C. N. Williams, Jr., 2009: Homogenization of temperature series via pairwise comparisons. *Journal of Climate*, **22**, 1700-1717, doi:10.1175/2008JCLI2263.1. [Available online at <http://journals.ametsoc.org/doi/abs/10.1175/2008JCLI2263.1>]
 37. Fall, S., A. Watts, J. Nielsen-Gammon, E. Jones, D. Niyogi, J. R. Christy, and R. A. Pielke, Sr., 2011: Analysis of the impacts of station exposure on the US Historical Climatology Network temperatures and temperature trends. *Journal of Geophysical Research*, **116**, D14120, doi:10.1029/2010JD015146.
 - Vose, R. S., S. Applequist, M. J. Menne, C. N. Williams, Jr., and P. Thorne, 2012: An intercomparison of temperature trends in the US Historical Climatology Network and recent atmospheric reanalyses. *Geophysical Research Letters*, **39**, 6, doi:10.1029/2012GL051387. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012GL051387/pdf>]
 38. Williams, C. N., M. J. Menne, and P. W. Thorne, 2012: Benchmarking the performance of pairwise homogenization of surface temperatures in the United States. *Journal of Geophysical Research*, **117**, 16, doi:10.1029/2011JD016761.
 39. Leibensperger, E. M., L. J. Mickley, D. J. Jacob, W. T. Chen, J. H. Seinfeld, A. Nenes, P. J. Adams, D. G. Streets, N. Kumar, and D. Rind, 2012: Climatic effects of 1950-2050 changes in US anthropogenic aerosols - Part 1: Aerosol trends and radiative forcing. *Atmospheric Chemistry and Physics*, **12**, 3333-3348, doi:10.5194/acp-12-3333-2012. [Available online at <http://atmos-chem-phys.net/12/3333/2012/acp-12-3333-2012.pdf>]
 40. EPA, 2012: *Climate Change Indicators in the United States*, 2nd Edition, 84 pp., U.S. Environmental Protection Agency, Washington, D.C. [Available online at <http://www.epa.gov/climatechange/pdfs/climateindicators-full-2012.pdf>]
 41. Dragoni, D., H. P. Schmid, C. A. Wayson, H. Potter, C. S. B. Grimmond, and J. C. Randolph, 2011: Evidence of increased net ecosystem productivity associated with a longer vegetated season in a deciduous forest in south-central Indiana, USA. *Global Change Biology*, **17**, 886-897, doi:10.1111/j.1365-2486.2010.02281.x.
 42. McMahon, S. M., G. G. Parker, and D. R. Miller, 2010: Evidence for a recent increase in forest growth. *Proceedings of the National Academy of Sciences*, **107**, 3611-3615, doi:10.1073/pnas.0912376107. [Available online at <http://www.pnas.org/content/early/2010/02/02/0912376107.full.pdf+html>]
 43. Jeong, S. J., C. H. Ho, H. J. Gim, and M. E. Brown, 2011: Phenology shifts at start vs. end of growing season in temperate vegetation over the Northern Hemisphere for the period 1982-2008. *Global Change Biology*, **17**, 2385-2399, doi:10.1111/j.1365-2486.2011.02397.x. [Available online at <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2486.2011.02397.x/pdf>]
 44. Peñuelas, J., T. Rutishauser, and I. Filella, 2009: Phenology feedbacks on climate change. *Science*, **324**, 887-888, doi:10.1126/science.1173004. [Available online at <http://www.sciencemag.org/content/324/5929/887.short>]
 45. Ziska, L., K. Knowlton, C. Rogers, D. Dalan, N. Tierney, M. A. Elder, W. Filley, J. Shropshire, L. B. Ford, C. Hedberg, P. Fleetwood, K. T. Hovanky, T. Kavanaugh, G. Fulford, R. F. Vrtis, J. A. Patz, J. Portnoy, F. Coates, L. Bielory, and D. Frenz, 2011: Recent warming by latitude associated with increased length of ragweed pollen season in central North America. *Proceedings of the National Academy of Sciences*, **108**, 4248-4251, doi:10.1073/pnas.1014107108. [Available online at <http://www.pnas.org/content/108/10/4248.full.pdf+html>]
 46. Hu, J. I. A., D. J. P. Moore, S. P. Burns, and R. K. Monson, 2010: Longer growing seasons lead to less carbon sequestration by a subalpine forest. *Global Change Biology*, **16**, 771-783, doi:10.1111/j.1365-2486.2009.01967.x. [Available online at <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2486.2009.01967.x/pdf>]
 47. McRoberts, D. B., and J. W. Nielsen-Gammon, 2011: A new homogenized climate division precipitation dataset for analysis of climate variability and climate change. *Journal of Applied Meteorology and Climatology*, **50**, 1187-1199, doi:10.1175/2010JAMC2626.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2010JAMC2626.1>]

48. Peterson, T. C., R. R. Heim, R. Hirsch, D. P. Kaiser, H. Brooks, N. S. Diffenbaugh, R. M. Dole, J. P. Giovannetone, K. Guirguis, T. R. Karl, R. W. Katz, K. Kunkel, D. Lettenmaier, G. J. McCabe, C. J. Paciorek, K. R. Ryberg, S. Schubert, V. B. S. Silva, B. C. Stewart, A. V. Vecchia, G. Villarini, R. S. Vose, J. Walsh, M. Wehner, D. Wolock, K. Wolter, C. A. Woodhouse, and D. Wuebbles, 2013: Monitoring and understanding changes in heat waves, cold waves, floods and droughts in the United States: State of knowledge. *Bulletin of the American Meteorological Society*, **94**, 821-834, doi:10.1175/BAMS-D-12-00066.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-12-00066.1>]
49. Groisman, P. Y., R. W. Knight, and T. R. Karl, 2012: Changes in intense precipitation over the central United States. *Journal of Hydrometeorology*, **13**, 47-66, doi:10.1175/JHM-D-11-039.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JHM-D-11-039.1>]
- Higgins, R. W., and V. E. Kousky, 2013: Changes in observed daily precipitation over the United States between 1950-79 and 1980-2009. *Journal of Hydrometeorology*, **14**, 105-121, doi:10.1175/jhm-d-12-062.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JHM-D-12-062.1>]
50. Held, I. M., and B. J. Soden, 2006: Robust responses of the hydrological cycle to global warming. *Journal of Climate*, **19**, 5686-5699, doi:10.1175/jcli3990.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI3990.1>]
51. Dai, A., 2006: Recent climatology, variability, and trends in global surface humidity. *Journal of Climate*, **19**, 3589-3606, doi:10.1175/JCLI3816.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI3816.1>]
- Simmons, A. J., K. M. Willett, P. D. Jones, P. W. Thorne, and D. P. Dee, 2010: Low-frequency variations in surface atmospheric humidity, temperature, and precipitation: Inferences from reanalyses and monthly gridded observational data sets. *Journal of Geophysical Research*, **115**, 1-21, doi:10.1029/2009JD012442.
- Willett, K. M., P. D. Jones, N. P. Gillett, and P. W. Thorne, 2008: Recent changes in surface humidity: Development of the HadCRUH dataset. *Journal of Climate*, **21**, 5364-5383, doi:10.1175/2008JCLI2274.1.
52. Kunkel, K. E., T. R. Karl, H. Brooks, J. Kossin, J. Lawrimore, D. Arndt, L. Bosart, D. Changnon, S. L. Cutter, N. Doesken, K. Emanuel, P. Ya. Groisman, R. W. Katz, T. Knutson, J. O'Brien, C. J. Paciorek, T. C. Peterson, K. Redmond, D. Robinson, J. Trapp, R. Vose, S. Weaver, M. Wehner, K. Wolter, and D. Wuebbles, 2013: Monitoring and understanding trends in extreme storms: State of knowledge. *Bulletin of the American Meteorological Society*, **94**, doi:10.1175/BAMS-D-11-00262.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-11-00262.1>]
53. Balling, R. C., Jr., and G. B. Goodrich, 2011: Spatial analysis of variations in precipitation intensity in the USA. *Theoretical and Applied Climatology*, **104**, 415-421, doi:10.1007/s00704-010-0353-0.
54. Wehner, M. F., 2013: Very extreme seasonal precipitation in the NARCCAP ensemble: Model performance and projections. *Climate Dynamics*, **40**, 59-80, doi:10.1007/s00382-012-1393-1.
55. Wuebbles, D. J., G. Meehl, K. Hayhoe, T. R. Karl, K. Kunkel, B. Santer, M. Wehner, B. Colle, E. M. Fischer, R. Fu, A. Goodman, E. Janssen, H. Lee, W. Li, L. N. Long, S. Olsen, A. J. Sheffield, and L. Sun, 2013: CMIP5 climate model analyses: Climate extremes in the United States. *Bulletin of the American Meteorological Society*, **in press**, doi:10.1175/BAMS-D-12-00172.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-12-00172.1>]
56. Schwalm, C. R., C. A. Williams, K. Schaefer, D. Baldocchi, T. A. Black, A. H. Goldstein, B. E. Law, W. C. Oechel, K. T. Paw, and R. L. Scott, 2012: Reduction in carbon uptake during turn of the century drought in western North America. *Nature Geoscience*, **5**, 551-556, doi:10.1038/ngeo1529. [Available online at <http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/33148/LawBeverlyForestryReductionCarbonUptake.pdf?sequence=1>]
57. Cook, B. I., R. L. Miller, and R. Seager, 2009: Amplification of the North American "Dust Bowl" drought through human-induced land degradation. *Proceedings of the National Academy of Sciences*, **106**, 4997-5001, doi:10.1073/pnas.0810200106. [Available online at <http://www.pnas.org/content/106/13/4997.full.pdf+html>]
58. Kunkel, K. E., P. D. Bromirski, H. E. Brooks, T. Cavazos, A. V. Douglas, D. R. Easterling, K. A. Emanuel, P. Y. Groisman, G. J. Holland, T. R. Knutson, J. P. Kossin, P. D. Komar, D. H. Levinson, and R. L. Smith, 2008: Ch. 2: Observed changes in weather and climate extremes. *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research*, T. R. Karl, G. A. Meehl, C. D. Miller, S. J. Hassol, A. M. Waple, and W. L. Murray, Eds., 35-80. [Available online at <http://downloads.climate-science.gov/sap/sap3-3/sap3-3-final-all.pdf>]
59. Karl, T. R., B. E. Gleason, M. J. Menne, J. R. McMahon, R. R. Heim, Jr., M. J. Brewer, K. E. Kunkel, D. S. Arndt, J. L. Privette, J. J. Bates, P. Y. Groisman, and D. R. Easterling, 2012: U.S. temperature and drought: Recent anomalies and trends. *Eos, Transactions, American Geophysical Union*, **93**, 473-474, doi:10.1029/2012EO470001. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012EO470001/pdf>]
60. Meehl, G. A., C. Tebaldi, G. Walton, D. Easterling, and L. McDaniel, 2009: Relative increase of record high maximum temperatures compared to record low minimum temperatures in the US. *Geophysical Research Letters*, **36**, L23701, doi:10.1029/2009GL040736. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009GL040736/pdf>]
61. Easterling, D. R., B. Horton, P. D. Jones, T. C. Peterson, T. R. Karl, D. E. Parker, M. J. Salinger, V. Razuvayev, N. Plummer, P. Jamason, and C. K. Folland, 1997: Maximum and minimum temperature trends for the globe. *Science*, **277**, 364-367, doi:10.1126/science.277.5324.364.
- McNider, R. T., G. J. Steeneveld, A. A. M. Holtslag, R. A. Pielke, Sr., S. Mackaro, A. Pour-Biazar, J. Walters, U. Nair, and J. Christy, 2012: Response and sensitivity of the nocturnal boundary layer over land to added longwave radiative forcing. *Journal of Geophysical Research*, **117**, D14106, doi:10.1029/2012JD017578. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012JD017578/pdf>]
- Vose, R. S., D. R. Easterling, and B. Gleason, 2005: Maximum and minimum temperature trends for the globe: An update through 2004. *Geophysical Research Letters*, **32**, L23822, doi:10.1029/2005GL024379.
62. Trenberth, K. E., 2011: Changes in precipitation with climate change. *Climate Research*, **47**, 123-138, doi:10.3354/cr00953.
63. Trenberth, K. E., and J. T. Fasullo, 2012: Climate extremes and climate change: The Russian heat wave and other climate extremes of 2010. *Journal of Geophysical Research: Atmospheres*, **117**, D17103, doi:10.1029/2012JD018020. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012JD018020/pdf>]

64. Meehl, G. A., T. F. Stocker, W. D. Collins, P. Friedlingstein, A. T. Gaye, J. M. Gregory, A. Kitoh, R. Knutti, J. M. Murphy, A. Noda, S. C. B. Raper, I. G. Watterson, A. J. Weaver, and Z.-C. Zhao, 2007: Ch. 10: Global climate projections. *Climate Change 2007: The Physical Science basis: Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor, and H. L. Miller, Eds., Cambridge University Press, 747-845. [Available online at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter10.pdf>]
65. Rupp, D. E., P. W. Mote, N. Massey, C. J. Rye, R. Jones, and M. R. Allen, 2012: Did human influence on climate make the 2011 Texas drought more probable? Explaining extreme events of 2011 from a climate perspective. *Bulletin of the American Meteorological Society*, T. C. Peterson, P. A. Stott, and S. Herring, Eds., 1052-1054. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-12-00021.1>]
66. Christidis, N., P. A. Stott, and S. J. Brown, 2011: The role of human activity in the recent warming of extremely warm daytime temperatures. *Journal of Climate*, **24**, 1922-1930, doi:10.1175/2011JCLI14150.1.
67. Duffy, P. B., and C. Tebaldi, 2012: Increasing prevalence of extreme summer temperatures in the U.S. *Climatic Change*, **111**, 487-495, doi:10.1007/s10584-012-0396-6.
68. Hoerling, M., M. Chen, R. Dole, J. Eischeid, A. Kumar, J. W. Nielsen-Gammon, P. Pegion, J. Perlwitz, X.-W. Quan, and T. Zhang, 2013: Anatomy of an extreme event. *Journal of Climate*, **26**, 2811-2832, doi:10.1175/JCLI-D-12-00270.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI-D-12-00270.1>]
69. Karl, T. R., G. A. Meehl, T. C. Peterson, K. E. Kunkel, W. J. Gutowski, Jr., and D. R. Easterling, 2008: Executive Summary. Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and US Pacific Islands. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research, T. R. Karl, G. A. Meehl, C. D. Miller, S. J. Hassol, A. M. Waple, and W. L. Murray, Eds., 1-9. [Available online at <http://library.globalchange.gov/sap-3-3-weather-and-climate-extremes-in-a-changing-climate>]
70. Kharin, V. V., F. W. Zwiers, X. Zhang, and M. Wehner, 2013: Changes in temperature and precipitation extremes in the CMIP5 ensemble. *Climatic Change*, **119**, 345-357, doi:10.1007/s10584-013-0705-8.
71. Hirsch, R. M., and K. R. Ryberg, 2012: Has the magnitude of floods across the USA changed with global CO₂ levels? *Hydrological Sciences Journal*, **57**, 1-9, doi:10.1080/02626667.2011.621895. [Available online at <http://www.tandfonline.com/doi/abs/10.1080/02626667.2011.621895>]
- Villarini, G., F. Serinaldi, J. A. Smith, and W. F. Krajewski, 2009: On the stationarity of annual flood peaks in the continental United States during the 20th century. *Water Resources Research*, **45**, W08417, doi:10.1029/2008wr007645. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2008WR007645/pdf>]
- Villarini, G., and J. A. Smith, 2010: Flood peak distributions for the eastern United States. *Water Resources Research*, **46**, W06504, doi:10.1029/2009wr008395. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009WR008395/pdf>]
- Villarini, G., J. A. Smith, M. L. Baeck, and W. F. Krajewski, 2011: Examining flood frequency distributions in the Midwest U.S. *JAWRA Journal of the American Water Resources Association*, **47**, 447-463, doi:10.1111/j.1752-1688.2011.00540.x. [Available online at <http://onlinelibrary.wiley.com/doi/10.1111/j.1752-1688.2011.00540.x/pdf>]
72. Sheffield, J., E. F. Wood, and M. L. Roderick, 2012: Little change in global drought over the past 60 years. *Nature*, **491**, 435-438, doi:10.1038/nature11575. [Available online at <http://www.nature.com/nature/journal/v491/n7424/pdf/nature11575.pdf>]
73. Mueller, B., and S. I. Seneviratne, 2012: Hot days induced by precipitation deficits at the global scale. *Proceedings of the National Academy of Sciences*, **109**, 12398-12403, doi:10.1073/pnas.1204330109. [Available online at <http://www.pnas.org/content/109/31/12398.full.pdf+html>]
74. Cayan, D. R., T. Das, D. W. Pierce, T. P. Barnett, M. Tyree, and A. Gershunov, 2010: Future dryness in the southwest US and the hydrology of the early 21st century drought. *Proceedings of the National Academy of Sciences*, **107**, 21271-21276, doi:10.1073/pnas.0912391107. [Available online at <http://www.pnas.org/content/early/2010/12/06/0912391107.full.pdf+html>]
75. Dai, A., 2012: Increasing drought under global warming in observations and models. *Nature Climate Change*, **3**, 52-58, doi:10.1038/nclimate1633. [Available online at http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate1633.html?utm_source=feedblitz&utm_medium=FeedBlitzEmail&utm_content=559845&utm_campaign=0]
76. Hoerling, M. P., J. K. Eischeid, X.-W. Quan, H. F. Diaz, R. S. Webb, R. M. Dole, and D. R. Easterling, 2012: Is a transition to semi-permanent drought conditions imminent in the Great Plains? *Journal of Climate*, **25**, 8380-8386, doi:10.1175/JCLI-D-12-00449.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI-D-12-00449.1>]
- Wehner, M., D. R. Easterling, J. H. Lawrimore, R. R. Heim Jr., R. S. Vose, and B. D. Santer, 2011: Projections of future drought in the continental United States and Mexico. *Journal of Hydrometeorology*, **12**, 1359-1377, doi:10.1175/2011JHM1351.1. [Available online at <http://journals.ametsoc.org/doi/abs/10.1175/2011JHM1351.1>]
77. Liang, X., D. P. Lettenmaier, E. F. Wood, and S. J. Burges, 1994: A simple hydrologically based model of land surface water and energy fluxes for general circulation models. *Journal of Geophysical Research*, **99**, 14415-14428, doi:10.1029/94JD00483. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/94JD00483/pdf>]
- Liang, X., E. F. Wood, and D. P. Lettenmaier, 1996: Surface soil moisture parameterization of the VIC-2L model: Evaluation and modification. *Global and Planetary Change*, **13**, 195-206, doi:10.1016/0921-8181(95)00046-1.
- Maurer, E. P., A. W. Wood, J. C. Adam, D. P. Lettenmaier, and B. Nijssen, 2002: A long-term hydrologically based dataset of land surface fluxes and states for the conterminous United States. *Journal of Climate*, **15**, 3237-3251, doi:10.1175/1520-0442(2002)015<3237:AL THBD>2.0.CO;2. [Available online at [http://journals.ametsoc.org/doi/pdf/10.1175/1520-0442\(2002\)015%3C3237%3AAL THBD%3E2.0.CO%3B2](http://journals.ametsoc.org/doi/pdf/10.1175/1520-0442(2002)015%3C3237%3AAL THBD%3E2.0.CO%3B2)]
- Nijssen, B., D. P. Lettenmaier, X. Liang, S. W. Wetzel, and E. F. Wood, 1997: Streamflow simulation for continental-scale river basins. *Water Resources Research*, **33**, 711-724, doi:10.1029/96WR03517. [Available online at <http://www.agu.org/pubs/crossref/1997/96WR03517.shtml>]

- Wood, A. W., A. Kumar, and D. P. Lettenmaier, 2005: A retrospective assessment of National Centers for Environmental Prediction climate model-based ensemble hydrologic forecasting in the western United States. *Journal of Geophysical Research*, **110**, 16, doi:10.1029/2004JD004508.
- Wood, A. W., and D. P. Lettenmaier, 2006: A test bed for new seasonal hydrologic forecasting approaches in the western United States. *Bulletin of the American Meteorological Society*, **87**, 1699-1712, doi:10.1175/BAMS-87-12-1699.
78. Bell, G. D., E. S. Blake, C. W. Landsea, T. B. Kimberlain, S. B. Goldenberg, J. Schemm, and R. J. Pasch, 2012: [Tropical cyclones] Atlantic basin [in "State of the Climate in 2011"]. *Bulletin of the American Meteorological Society*, **93**, S99-S105, doi:10.1175/2012BAMSStateoftheClimate.1. [Available online at <http://www1.ncdc.noaa.gov/pub/data/cmb/bams-sotc/climate-assessment-2011-lo-rez.pdf>]
- Bender, M. A., T. R. Knutson, R. E. Tuleya, J. J. Sirutis, G. A. Vecchi, S. T. Garner, and I. M. Held, 2010: Modeled impact of anthropogenic warming on the frequency of intense Atlantic hurricanes. *Science*, **327**, 454-458, doi:10.1126/science.1180568.
- Emanuel, K., 2007: Environmental factors affecting tropical cyclone power dissipation. *Journal of Climate*, **20**, 5497-5509, doi:10.1175/2007JCLI1571.1.
79. Landsea, C. W., and J. L. Franklin, 2013: Atlantic hurricane database uncertainty and presentation of a new database format. *Monthly Weather Review*, **141**, 3576-3592, doi:10.1175/MWR-D-12-00254.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/MWR-D-12-00254.1>]
- Torn, R. D., and C. Snyder, 2012: Uncertainty of tropical cyclone best-track information. *Weather and Forecasting*, **27**, 715-729, doi:10.1175/waf-d-11-00085.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/WAF-D-11-00085.1>]
80. Camargo, S. J., M. Ting, and Y. Kushnir, 2013: Influence of local and remote SST on North Atlantic tropical cyclone potential intensity. *Climate Dynamics*, **40**, 1515-1529, doi:10.1007/s00382-012-1536-4.
81. Ting, M., Y. Kushnir, R. Seager, and C. Li, 2009: Forced and internal twentieth-century SST Trends in the North Atlantic. *Journal of Climate*, **22**, 1469-1481, doi:10.1175/2008JCLI2561.1.
- Zhang, R., T. L. Delworth, R. Sutton, D. L. R. Hodson, K. W. Dixon, I. M. Held, Y. Kushnir, J. Marshall, Y. Ming, R. Msadek, J. Robson, A. J. Rosati, M. Ting, and G. A. Vecchi, 2013: Have aerosols caused the observed Atlantic multidecadal variability? *Journal of the Atmospheric Sciences*, **70**, 1135-1144, doi:10.1175/jas-d-12-0331.1.
82. Booth, B. B. B., N. J. Dunstone, P. R. Halloran, T. Andrews, and N. Bellouin, 2012: Aerosols implicated as a prime driver of twentieth-century North Atlantic climate variability. *Nature*, **484**, 228-232, doi:10.1038/nature10946.
- Mann, M. E., and K. A. Emanuel, 2006: Atlantic hurricane trends linked to climate change. *Eos, Transactions, American Geophysical Union*, **87**, 233-244, doi:10.1029/2006EO240001. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2006EO240001/pdf>]
83. Emanuel, K., and A. Sobel, 2013: Response of tropical sea surface temperature, precipitation, and tropical cyclone-related variables to changes in global and local forcing. *Journal of Advances in Modeling Earth Systems*, **5**, 447-458, doi:10.1002/jame.20032. [Available online at <http://onlinelibrary.wiley.com/doi/10.1002/jame.20032/pdf>]
- Zhang, R., and T. L. Delworth, 2009: A new method for attributing climate variations over the Atlantic Hurricane Basin's main development region. *Geophysical Research Letters*, **36**, 5, doi:10.1029/2009GL037260.
84. Ramsay, H. A., and A. H. Sobel, 2011: Effects of relative and absolute sea surface temperature on tropical cyclone potential intensity using a single-column model. *Journal of Climate*, **24**, 183-193, doi:10.1175/2010jcli3690.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2010JCLI3690.1>]
- Vecchi, G. A., A. Clement, and B. J. Soden, 2008: Examining the tropical Pacific's response to global warming. *Eos, Transactions, American Geophysical Union*, **89**, 81-83, doi:10.1029/2008EO090002.
- Vecchi, G. A., and B. J. Soden, 2007: Effect of remote sea surface temperature change on tropical cyclone potential intensity. *Nature*, **450**, 1066-1070, doi:10.1038/nature06423.
85. Kossin, J. P., S. J. Camargo, and M. Sitkowski, 2010: Climate modulation of North Atlantic hurricane tracks. *Journal of Climate*, **23**, 3057-3076, doi:10.1175/2010jcli3497.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2010JCLI3497.1>]
86. Wang, C., H. Liu, S.-K. Lee, and R. Atlas, 2011: Impact of the Atlantic warm pool on United States landfalling hurricanes. *Geophysical Research Letters*, **38**, L19702, doi:10.1029/2011gl049265. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2011GL049265/pdf>]
87. Knutson, T. R., J. L. McBride, J. Chan, K. Emanuel, G. Holland, C. Landsea, I. Held, J. P. Kossin, A. K. Srivastava, and M. Sugi, 2010: Tropical cyclones and climate change. *Nature Geoscience*, **3**, 157-163, doi:10.1038/ngeo779.
88. Villarini, G., G. A. Vecchi, and J. A. Smith, 2012: U.S. landfalling and North Atlantic hurricanes: Statistical modeling of their frequencies and ratios. *Monthly Weather Review*, **140**, 44-65, doi:10.1175/mwr-d-11-00063.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/MWR-D-11-00063.1>]
- Weinkle, J., R. Maue, and R. Pielke, Jr., 2012: Historical global tropical cyclone landfalls. *Journal of Climate*, **25**, 4729-4735, doi:10.1175/jcli-d-11-00719.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI-D-11-00719.1>]
89. Murakami, H., and B. Wang, 2010: Future change of North Atlantic tropical cyclone tracks: Projection by a 20-km-mesh global atmospheric model. *Journal of Climate*, **23**, 2699-2721, doi:10.1175/2010jcli3338.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2010JCLI3338.1>]
90. Knutson, T. R., J. J. Sirutis, G. A. Vecchi, S. Garner, M. Zhao, H.-S. Kim, M. Bender, R. E. Tuleya, I. M. Held, and G. Villarini, 2013: Dynamical downscaling projections of twenty-first-century Atlantic hurricane activity: CMIP3 and CMIP5 model-based scenarios. *Journal of Climate*, **27**, 6591-6617, doi:10.1175/jcli-d-12-00539.1. [Available online at <http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-12-00539.1>]

91. Seneviratne, S. I., N. Nicholls, D. Easterling, C. M. Goodess, S. Kanae, J. Kossin, Y. Luo, J. Marengo, K. McInnes, M. Rahimi, M. Reichstein, A. Sorteberg, C. Vera, and X. Zhang, 2012: Ch. 3: Changes in climate extremes and their impacts on the natural physical environment. *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC)*, C. B. Field, V. Barros, T. F. Stocker, Q. Dahe, D. J. Dokken, K. L. Ebi, M. D. Mastrandrea, K. J. Mach, G.-K. Plattner, S. K. Allen, M. Tignor, and P. M. Midgley, Eds., Cambridge University Press, 109-230.
92. Knapp, K. R., M. C. Kruk, D. H. Levinson, H. J. Diamond, and C. J. Neumann, 2010: The International Best Track Archive for Climate Stewardship (IBTrACS). *Bulletin of the American Meteorological Society*, **91**, 363-376, doi:10.1175/2009BAMS2755.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2009BAMS2755.1>]
93. Kossin, J. P., K. R. Knapp, D. J. Vimont, R. J. Murnane, and B. A. Harper, 2007: A globally consistent reanalysis of hurricane variability and trends. *Geophysical Research Letters*, **34**, L04815, doi:10.1029/2006GL028836. [Available online at <http://www.agu.org/pubs/crossref/2007/2006GL028836.shtml>]
94. Kossin, J. P., T. L. Olander, and K. R. Knapp, 2013: Trend analysis with a new global record of tropical cyclone intensity. *Journal of Climate*, **26**, 9960-9976, doi:10.1175/JCLI-D-13-00262.1.
95. NOAA, cited 2013: Billion Dollar Weather/Climate Disasters. National Oceanic and Atmospheric Administration [Available online at <http://www.ncdc.noaa.gov/billions>]
96. Del Genio, A. D., M. S. Yao, and J. Jonas, 2007: Will moist convection be stronger in a warmer climate? *Geophysical Research Letters*, **34**, 5, doi:10.1029/2007GL030525. [Available online at <http://www.agu.org/pubs/crossref/2007/2007GL030525.shtml>]
- Trapp, R. J., N. S. Diffenbaugh, H. E. Brooks, M. E. Baldwin, E. D. Robinson, and J. S. Pal, 2007: Changes in severe thunderstorm environment frequency during the 21st century caused by anthropogenically enhanced global radiative forcing. *Proceedings of the National Academy of Sciences*, **104**, 19719-19723, doi:10.1073/pnas.0705494104.
97. Diffenbaugh, N. S., M. Scherer, and R. J. Trapp, 2013: Robust increases in severe thunderstorm environments in response to greenhouse forcing. *Proceedings of the National Academy of Sciences*, **110**, 16361-16366, doi:10.1073/pnas.1307758110. [Available online at <http://www.pnas.org/content/110/41/16361.full.pdf+html>]
98. Vose, R. S., S. Applequist, M. A. Bourassa, S. C. Pryor, R. J. Barthelmie, B. Blanton, P. D. Bromirski, H. E. Brooks, A. T. DeGaetano, R. M. Dole, D. R. Easterling, R. E. Jensen, T. R. Karl, R. W. Katz, K. Klink, M. C. Kruk, K. E. Kunkel, M. C. MacCracken, T. C. Peterson, K. Shein, B. R. Thomas, J. E. Walsh, X. L. Wang, M. F. Wehner, D. J. Wuebbles, and R. S. Young, 2013: Monitoring and understanding changes in extremes: Extratropical storms, winds, and waves. *Bulletin of the American Meteorological Society*, **in press**, doi:10.1175/BAMS-D-12-00162.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-12-00162.1>]
99. Wang, X. L., Y. Feng, G. P. Compo, V. R. Swail, F. W. Zwiers, R. J. Allan, and P. D. Sardeshmukh, 2012: Trends and low frequency variability of extra-tropical cyclone activity in the ensemble of twentieth century reanalysis. *Climate Dynamics*, 1-26, doi:10.1007/s00382-012-1450-9.
100. Wang, X. L., V. R. Swail, and F. W. Zwiers, 2006: Climatology and changes of extratropical cyclone activity: Comparison of ERA-40 with NCEP-NCAR reanalysis for 1958-2001. *Journal of Climate*, **19**, 3145-3166, doi:10.1175/JCLI3781.1. [Available online at <http://journals.ametsoc.org/doi/abs/10.1175/JCLI3781.1>]
101. Squires, M. F., J. Lawrimore, R. R. Heim, D. A. Robinson, M. Gerbush, T. Estilow, C. Tabor, and A. Wilson, 2009: Development of new snowstorm indices and databases at the National Climatic Data Center. *American Geophysical Union, Fall Meeting 2009*, San Francisco, CA. [Available online at <http://adsabs.harvard.edu/abs/2009AGUFMIN13A1076S>]
102. Kunkel, K. E., M. Palecki, L. Ensor, K. G. Hubbard, D. Robinson, K. Redmond, and D. Easterling, 2009: Trends in twentieth-century US snowfall using a quality-controlled dataset. *Journal of Atmospheric and Oceanic Technology*, **26**, 33-44, doi:10.1175/2008JTECHA1138.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2008JTECHA1138.1>]
103. Kunkel, K. E., L. Ensor, M. Palecki, D. Easterling, D. Robinson, K. G. Hubbard, and K. Redmond, 2009: A new look at lake-effect snowfall trends in the Laurentian Great Lakes using a temporally homogeneous data set. *Journal of Great Lakes Research*, **35**, 23-29, doi:10.1016/j.jglr.2008.11.003. [Available online at <http://www.bioone.org/doi/pdf/10.1016/j.jglr.2008.11.003>]
104. Christy, J. R., 2012: Searching for information in 133 years of California snowfall observations. *Journal of Hydrometeorology*, **13**, 895-912, doi:10.1175/JHM-D-11-040.1.
105. Kunkel, K. E., M. A. Palecki, L. Ensor, D. Easterling, K. G. Hubbard, D. Robinson, and K. Redmond, 2009: Trends in twentieth-century U.S. extreme snowfall seasons. *Journal of Climate*, **22**, 6204-6216, doi:10.1175/2009JCLI2631.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/2009JCLI2631.1>]
106. Francis, J. A., and S. J. Vavrus, 2012: Evidence linking Arctic amplification to extreme weather in mid-latitudes. *Geophysical Research Letters*, **39**, L06801, doi:10.1029/2012GL051000. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012GL051000/pdf>]
107. Screen, J. A., and I. Simmonds, 2013: Exploring links between Arctic amplification and mid-latitude weather. *Geophysical Research Letters*, **40**, 959-964, doi:10.1002/grl.50174. [Available online at <http://onlinelibrary.wiley.com/doi/10.1002/grl.50174/pdf>]
108. BAMS, cited 2012: State of the Climate Reports. National Climatic Data Center. [Available online at <http://www.ncdc.noaa.gov/bams-state-of-the-climate/>]
109. CCSP, 2008: *Weather and Climate Extremes in a Changing Climate - Regions of Focus - North America, Hawaii, Caribbean, and U.S. Pacific Islands. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research*. Vol. 3.3, T. R. Karl, G. A. Meehl, C. D. Miller, S. J. Hassol, A. M. Waple, and W. L. Murray, Eds. Department of Commerce, NOAA's National Climatic Data Center, 164 pp. [Available online at <http://downloads.globalchange.gov/sap/sap3-3/sap3-3-final-all.pdf>]
110. Church, J. A., N. J. White, L. F. Konikow, C. M. Domingues, J. G. Cogley, E. Rignot, J. M. Gregory, M. R. van den Broeke, A. J. Monaghan, and I. Velicogna, 2011: Revisiting the Earth's sea-level and energy budgets from 1961 to 2008. *Geophysical Research Letters*, **38**, L18601, doi:10.1029/2011GL048794.

111. AMAP, 2011: Snow, Water, Ice and Permafrost in the Arctic (SWIPA): Climate Change and the Cryosphere, 538 pp., Arctic Monitoring and Assessment Programme, Oslo, Norway. [Available online at <http://www.amap.no/documents/download/968>]
112. Kemp, A. C., B. P. Horton, J. P. Donnelly, M. E. Mann, M. Vermeer, and S. Rahmstorf, 2011: Climate related sea-level variations over the past two millennia. *Proceedings of the National Academy of Sciences*, **108**, 11017-11022, doi:10.1073/pnas.1015619108. [Available online at <http://www.pnas.org/content/108/27/11017.full.pdf+html>]
113. Church, J. A., and N. J. White, 2011: Sea-level rise from the late 19th to the early 21st century. *Surveys in Geophysics*, **32**, 585-602, doi:10.1007/s10712-011-9119-1.
114. Grinsted, A., J. C. Moore, and S. Jevrejeva, 2010: Reconstructing sea level from paleo and projected temperatures 200 to 2100 AD. *Climate Dynamics*, **34**, 461-472, doi:10.1007/s00382-008-0507-2. [Available online at <http://link.springer.com/article/10.1007/s00382-008-0507-2/fulltext.html>]
115. Jevrejeva, S., J. C. Moore, and A. Grinsted, 2012: Sea level projections to AD2500 with a new generation of climate change scenarios. *Global and Planetary Change*, **80-81**, 14-20, doi:10.1016/j.gloplacha.2011.09.006.
116. Rahmstorf, S., G. Foster, and A. Cazenave, 2012: Comparing climate projections to observations up to 2011. *Environmental Research Letters*, **7**, 044035, doi:10.1088/1748-9326/7/4/044035. [Available online at http://iopscience.iop.org/1748-9326/7/4/044035/pdf/1748-9326_7_4_044035.pdf]
117. Vermeer, M., and S. Rahmstorf, 2009: Global sea level linked to global temperature. *Proceedings of the National Academy of Sciences*, **106**, 21527-21532, doi:10.1073/pnas.0907765106.
118. Gregory, J. M., N. J. White, J. A. Church, M. F. P. Bierkens, J. E. Box, M. R. van den Broeke, J. G. Cogley, X. Fettweis, E. Hanna, P. Huybrechts, L. F. Konikow, P. W. Leclercq, B. Marzeion, J. Oerlemans, M. E. Tamisiea, Y. Wada, L. M. Wake, and R. S. W. van de Wal, 2013: Twentieth-century global-mean sea level rise: Is the whole greater than the sum of the parts? *Journal of Climate*, **26**, 4476-4499, doi:10.1175/JCLI-D-12-00319.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI-D-12-00319.1>]
119. Yin, J., 2012: Century to multi-century sea level rise projections from CMIP5 models. *Geophysical Research Letters*, **39**, 7, doi:10.1029/2012GL052947.
120. Marzeion, B., A. H. Jarosch, and M. Hofer, 2012: Past and future sea-level change from the surface mass balance of glaciers. *The Cryosphere Discussions*, **6**, 3177-3241, doi:10.5194/tcd-6-3177-2012. [Available online at <http://www.the-cryosphere-discuss.net/6/3177/2012/tcd-6-3177-2012.pdf>]
121. Gladstone, R. M., V. Lee, J. Rougier, A. J. Payne, H. Hellmer, A. Le Brocq, A. Shepherd, T. L. Edwards, J. Gregory, and S. L. Cornford, 2012: Calibrated prediction of Pine Island Glacier retreat during the 21st and 22nd centuries with a coupled flowline model. *Earth and Planetary Science Letters*, **333-334**, 191-199, doi:10.1016/j.epsl.2012.04.022.
- Joughin, I., B. E. Smith, and D. M. Holland, 2010: Sensitivity of 21st century sea level to ocean-induced thinning of Pine Island Glacier, Antarctica. *Geophysical Research Letters*, **37**, L20502, doi:10.1029/2010GL044819. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2010GL044819/pdf>]
- Katsman, C. A., A. Sterl, J. J. Beersma, H. W. van den Brink, W. Hazeleger, R. E. Kopp, D. Kroon, J. Kwadijk, R. Lammersen, J. Lowe, M. Oppenheimer, H.-P. Plag, J. Ridley, H. von Storch, D. G. Vaughan, P. Vellinga, L. L. A. Vermeersen, R. S. W. Wal, and R. Weisse, 2011: Exploring high-end scenarios for local sea level rise to develop flood protection strategies for a low-lying delta - the Netherlands as an example. *Climatic Change*, **109**, 617-645, doi:10.1007/s10584-011-0037-5. [Available online at http://download.springer.com/static/pdf/398/art%253A10.1007%252Fs10584-011-0037-5.pdf?auth66=1364400486_b37320cb6a1b58cce0cd41a5e3bffc8&ext=.pdf]
122. Burkett, V., and M. Davidson, 2012: *Coastal Impacts, Adaptation and Vulnerabilities: A Technical Input to the 2013 National Climate Assessment*. Island Press, 216 pp.
123. Parris, A., P. Bromirski, V. Burkett, D. Cayan, M. Culver, J. Hall, R. Horton, K. Knuuti, R. Moss, J. Obeysekera, A. Sallenger, and J. Weiss, 2012: Global Sea Level Rise Scenarios for the United States National Climate Assessment. NOAA Tech Memo OAR CPO-1, 37 pp., National Oceanic and Atmospheric Administration, Silver Spring, MD. [Available online at http://scenarios.globalchange.gov/sites/default/files/NOAA_SLR_r3_0.pdf]
124. Strauss, B. H., R. Ziemiński, J. L. Weiss, and J. T. Overpeck, 2012: Tidally adjusted estimates of topographic vulnerability to sea level rise and flooding for the contiguous United States. *Environmental Research Letters*, **7**, 014033, doi:10.1088/1748-9326/7/1/014033.
125. Gillett, N. P., V. K. Arora, K. Zickfeld, S. J. Marshall, and W. J. Merryfield, 2011: Ongoing climate change following a complete cessation of carbon dioxide emissions. *Nature Geoscience*, **4**, 83-87, doi:10.1038/ngeo1047. [Available online at <http://www.nature.com/ngeo/journal/v4/n2/pdf/ngeo1047.pdf>]
- Solomon, S., G.-K. Plattner, R. Knutti, and P. Friedlingstein, 2009: Irreversible climate change due to carbon dioxide emissions. *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.0812721106. [Available online at <http://www.pnas.org/content/early/2009/01/28/0812721106.full.pdf+html>]
126. Robinson, A., R. Calov, and A. Ganopolski, 2012: Multistability and critical thresholds of the Greenland ice sheet. *Nature Climate Change*, **2**, 429-432, doi:10.1038/nclimate1449. [Available online at <http://www.nature.com/nclimate/journal/v2/n6/pdf/nclimate1449.pdf>]
127. Jevrejeva, S., J. C. Moore, A. Grinsted, and P. L. Woodworth, 2008: Recent global sea level acceleration started over 200 years ago. *Geophysical Research Letters*, **35**, 4, doi:10.1029/2008GL033611. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2008GL033611/full>]
128. Nerem, R. S., D. P. Chambers, C. Choe, and G. T. Mitchum, 2010: Estimating mean sea level change from the TOPEX and Jason altimeter missions. *Marine Geodesy*, **33**, 435-446, doi:10.1080/01490419.2010.491031. [Available online at <http://www.tandfonline.com/doi/pdf/10.1080/01490419.2010.491031>]
129. Bai, X., J. Wang, C. Sellinger, A. Clites, and R. Assel, 2012: Interannual variability of Great Lakes ice cover and its relationship to NAO and ENSO. *Journal of Geophysical Research: Oceans*, **117**, C03002, doi:10.1029/2010jc006932.
130. Bai, X., and J. Wang, 2012: Atmospheric teleconnection patterns associated with severe and mild ice cover on the Great Lakes, 1963-2011. *Water Quality Research Journal of Canada* **47**, 421-435, doi:10.2166/wqrjc.2012.009.

131. NSIDC, cited 2012: Arctic Sea Ice Reaches Lowest Extent for the Year and the Satellite Record. The National Snow and Ice Data Center. [Available online at http://nsidc.org/news/press/2012_seaiceminimum.html]
132. Kwok, R., and D. A. Rothrock, 2009: Decline in Arctic sea ice thickness from submarine and ICESat records: 1958–2008. *Geophysical Research Letters*, **36**, L15501, doi:10.1029/2009gl039035. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009GL039035/pdf>]
133. Maslanik, J., J. Stroeve, C. Fowler, and W. Emery, 2011: Distribution and trends in Arctic sea ice age through spring 2011. *Geophysical Research Letters*, **38**, L13502, doi:10.1029/2011gl047735. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2011GL047735/pdf>]
134. Laxon, S. W., K. A. Giles, A. L. Ridout, D. J. Wingham, R. Willatt, R. Cullen, R. Kwok, A. Schweiger, J. Zhang, C. Haas, S. Hendricks, R. Krishfield, N. Kurtz, S. Farrell, and M. Davidson, 2013: CryoSat-2 estimates of Arctic sea ice thickness and volume. *Geophysical Research Letters*, **40**, 732–737, doi:10.1002/grl.50193.
135. Liu, J., J. A. Curry, H. Wang, M. Song, and R. M. Horton, 2012: Impact of declining Arctic sea ice on winter snowfall. *Proceedings of the National Academy of Sciences*, **109**, 4074–4079, doi:10.1073/pnas.1114910109. [Available online at <http://www.pnas.org/content/109/11/4074.full.pdf+html>]
136. Stroeve, J. C., V. Kattsov, A. Barrett, M. Serreze, T. Pavlova, M. Holland, and W. N. Meier, 2012: Trends in Arctic sea ice extent from CMIP5, CMIP3 and observations. *Geophysical Research Letters*, **39**, L16502, doi:10.1029/2012GL052676.
137. Wang, M., and J. E. Overland, 2009: A sea ice free summer Arctic within 30 years? *Geophysical Research Letters*, **36**, L07502, doi:10.1029/2009GL037820. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009GL037820/pdf>]
138. —, 2012: A sea ice free summer Arctic within 30 years: An update from CMIP5 models. *Geophysical Research Letters*, **39**, L18501, doi:10.1029/2012GL052868. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012GL052868/pdf>]
139. Overland, J. E., and M. Wang, 2013: When will the summer Arctic be nearly sea ice free? *Geophysical Research Letters*, **40**, 2097–2101, doi:10.1002/grl.50316. [Available online at <http://onlinelibrary.wiley.com/doi/10.1002/grl.50316/pdf>]
140. Kay, J. E., M. M. Holland, and A. Jahn, 2011: Inter-annual to multi-decadal Arctic sea ice extent trends in a warming world. *Geophysical Research Letters*, **38**, L15708, doi:10.1029/2011GL048008. [Available online at <http://www.agu.org/pubs/crossref/2011/2011GL048008.shtml>]
141. Rogers, T. S., J. E. Walsh, T. S. Rupp, L. W. Brigham, and M. Sfraga, 2013: Future Arctic marine access: Analysis and evaluation of observations, models, and projections of sea ice. *The Cryosphere*, **7**, 321–332, doi:10.5194/tc-7-321-2013. [Available online at <http://www.the-cryosphere.net/7/321/2013/tc-7-321-2013.pdf>]
142. Cavalieri, D. J., and C. L. Parkinson, 2012: Arctic sea ice variability and trends, 1979–2010. *The Cryosphere*, **6**, 881–889, doi:10.5194/tc-6-881-2012. [Available online at <http://www.the-cryosphere.net/6/881/2012/tc-6-881-2012.pdf>]
- Parkinson, C. L., and D. J. Cavalieri, 2012: Antarctic sea ice variability and trends, 1979–2010. *The Cryosphere*, **6**, 871–880, doi:10.5194/tc-6-871-2012. [Available online at <http://www.the-cryosphere.net/6/871/2012/tc-6-871-2012.pdf>]
143. Holland, P. R., and R. Kwok, 2012: Wind-driven trends in Antarctic sea-ice drift. *Nature Geoscience*, **5**, 872–875, doi:10.1038/ngeo1627.
144. Turner, J., J. C. Comiso, G. J. Marshall, T. A. Lachlan-Cope, T. Bracegirdle, T. Maksym, M. P. Meredith, Z. Wang, and A. Orr, 2009: Non-annular atmospheric circulation change induced by stratospheric ozone depletion and its role in the recent increase of Antarctic sea ice extent. *Geophysical Research Letters*, **36**, L08502, doi:10.1029/2009gl037524. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2009GL037524/pdf>]
145. Shi, X., S. J. Déry, P. Y. Groisman, and D. P. Lettenmaier, 2013: Relationships between recent pan-Arctic snow cover and hydroclimate trends. *Journal of Climate*, **26**, 2048–2064, doi:10.1175/jcli-d-12-00044.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI-D-12-00044.1>]
146. Derksen, C., and R. Brown, 2012: Spring snow cover extent reductions in the 2008–2012 period exceeding climate model projections. *Geophysical Research Letters*, **39**, L19504, doi:10.1029/2012gl053387. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012GL053387/pdf>]
147. Fettweis, X., M. Tedesco, M. van den Broeke, and J. Ettema, 2011: Melting trends over the Greenland ice sheet (1958–2009) from spaceborne microwave data and regional climate models. *The Cryosphere*, **5**, 359–375, doi:10.5194/tc-5-359-2011. [Available online at <http://www.the-cryosphere.net/5/359/2011/tc-5-359-2011.pdf>]
148. Dahl-Jensen, D., J. J. Bamber, C. E. Bøggild, E. Buch, J. H. Christensen, K. Dethloff, M. Fahnestock, S. Marshall, M. Rosing, K. Steffen, R. Thomas, M. Truffer, M. van den Broeke, and C. van der Veen, 2011: Ch. 8: The Greenland Ice Sheet in a changing climate. *Snow, Water, Ice and Permafrost in the Arctic (SWIPA): Climate Change and the Cryosphere. Arctic Monitoring and Assessment Programme (AMAP), Arctic Monitoring and Assessment Programme* [Available online at <http://amap.no/swipa/CombinedReport.pdf>]
149. Moon, T., I. Joughin, B. Smith, and I. Howat, 2012: 21st-Century Evolution of Greenland Outlet Glacier Velocities. *Science*, **336**, 576–578, doi:10.1126/science.1219985.
150. MacDougall, A. H., C. A. Avis, and A. J. Weaver, 2012: Significant contribution to climate warming from the permafrost carbon feedback. *Nature Geoscience*, **5**, 719–721, doi:10.1038/ngeo1573.
151. Walter, K. M., L. C. Smith, and F. S. Chapin, III, 2007: Methane bubbling from northern lakes: Present and future contributions to the global methane budget. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **365**, 1657–1676, doi:10.1098/rsta.2007.2036.
152. Shakhova, N., I. Semiletov, A. Salyuk, V. Joussupov, D. Kosmach, and O. Gustafsson, 2010: Extensive methane venting to the atmosphere from sediments of the East Siberian Arctic Shelf. *Science*, **327**, 1246–1250, doi:10.1126/science.1182221.
153. Archer, D., 2007: Methane hydrate stability and anthropogenic climate change. *Biogeosciences*, **4**, 521–544, doi:10.5194/bg-4-521-2007. [Available online at <http://www.biogeosciences.net/4/521/2007/bg-4-521-2007.pdf>]
154. Doney, S. C., V. J. Fabry, R. A. Feely, and J. A. Kleypas, 2009: Ocean acidification: The other CO₂ problem. *Annual Review of Marine Science*, **1**, 169–192, doi:10.1146/annurev.marine.010908.163834. [Available online at <http://www.annualreviews.org/doi/abs/10.1146/annurev.marine.010908.163834>]

155. Le Quéré, C., M. R. Raupach, J. G. Canadell, G. Marland, L. Bopp, P. Ciais, T. J. Conway, S. C. Doney, R. A. Feely, P. Foster, P. Friedlingstein, K. Gurney, R. A. Houghton, J. I. House, C. Huntingford, P. E. Levy, M. R. Lomas, J. Majkut, N. Metzl, J. P. Ometto, G. P. Peters, I. C. Prentice, J. T. Randerson, S. W. Running, J. L. Sarmiento, U. Schuster, S. Sitch, T. Takahashi, N. Viovy, G. R. van der Werf, and F. I. Woodward, 2009: Trends in the sources and sinks of carbon dioxide. *Nature Geoscience*, **2**, 831-836, doi:10.1038/ngeo689. [Available online at <http://www.nature.com/ngeo/journal/v2/n12/full/ngeo689.html>]
156. Caldeira, K., and M. E. Wickett, 2003: Oceanography: Anthropogenic carbon and ocean pH. *Nature*, **425**, 365, doi:10.1038/425365a.
157. Feely, R. A., S. C. Doney, and S. R. Cooley, 2009: Ocean acidification: Present conditions and future changes in a high-CO₂ world. *Oceanography*, **22**, 36-47, doi:10.5670/oceanog.2009.95. [Available online at http://www.tos.org/oceanography/archive/22-4_feely.pdf]
158. Orr, J. C., V. J. Fabry, O. Aumont, L. Bopp, S. C. Doney, R. A. Feely, A. Gnanadesikan, N. Gruber, A. Ishida, F. Joos, R. M. Key, K. Lindsay, E. Maier-Reimer, R. Matear, P. Monfray, A. Mouchet, R. G. Najjar, G.-K. Plattner, K. B. Rodgers, C. L. Sabine, J. L. Sarmiento, G. R. Schlitzer, R. D. Slater, I. J. Totterdell, M.-F. Weirig, Y. Yamanaka, and A. Yool, 2005: Anthropogenic ocean acidification over the twenty-first century and its impact on calcifying organisms. *Nature*, **437**, 681-686, doi:10.1038/nature04095.
159. Hönisch, B., A. Ridgwell, D. N. Schmidt, E. Thomas, S. J. Gibbs, A. Sluijs, R. Zeebe, L. Kump, R. C. Martindale, S. E. Greene, W. Kiessling, J. Ries, J. C. Zachos, D. L. Royer, S. Barker, T. M. M. Jr., R. Moyer, C. Pelejero, P. Ziveri, G. L. Foster, and B. Williams, 2012: The geological record of ocean acidification. *Science*, **335**, 1058-1063, doi:10.1126/science.1208277.
160. Orr, J. C., 2011: Recent and future changes in ocean carbonate chemistry. *Ocean Acidification*, G. J.-P. H. L., Ed., Oxford University Press, 41-66.
161. Feely, R. A., C. L. Sabine, J. M. Hernandez-Ayon, D. Ianson, and B. Hales, 2008: Evidence for upwelling of corrosive "acidified" water onto the continental shelf. *Science*, **320**, 1490-1492, doi:10.1126/science.1155676. [Available online at <http://www.sciencemag.org/content/320/5882/1490.short>]
162. Mathis, J. T., J. N. Cross, and N. R. Bates, 2011: Coupling primary production and terrestrial runoff to ocean acidification and carbonate mineral suppression in the eastern Bering Sea. *Journal of Geophysical Research*, **116**, C02030, doi:10.1029/2010JC006453. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2010JC006453/pdf>]
163. Yamamoto-Kawai, M., F. A. McLaughlin, E. C. Carmack, S. Nishino, and K. Shimada, 2009: Aragonite undersaturation in the Arctic ocean: Effects of ocean acidification and sea ice melt. *Science*, **326**, 1098-1100, doi:10.1126/science.1174190.
164. Feely, R. A., S. R. Alin, J. Newton, C. L. Sabine, M. Warner, A. Devol, C. Krembs, and C. Maloy, 2010: The combined effects of ocean acidification, mixing, and respiration on pH and carbonate saturation in an urbanized estuary. *Estuarine, Coastal and Shelf Science*, **88**, 442-449, doi:10.1016/j.ecss.2010.05.004.
165. Gruber, N., C. Hauri, Z. Lachkar, D. Loher, T. L. Frölicher, and G. K. Plattner, 2012: Rapid progression of ocean acidification in the California Current System. *Science*, **337**, 220-223, doi:10.1126/science.1216773. [Available online at <http://www.sciencemag.org/content/337/6091/220.short>]
166. Steinacher, M., F. Joos, T. L. Frölicher, G.-K. Plattner, and S. C. Doney, 2009: Imminent ocean acidification in the Arctic projected with the NCAR global coupled carbon cycle-climate model. *Biogeosciences*, **6**, 515-533, doi:10.5194/bg-6-515-2009. [Available online at <http://www.biogeosciences.net/6/515/2009/>]
167. Barton, A., B. Hales, G. G. Waldbusser, C. Langdon, and R. A. Feely, 2012: The Pacific oyster, *Crassostrea gigas*, shows negative correlation to naturally elevated carbon dioxide levels: Implications for near-term ocean acidification effects. *Limnology and Oceanography*, **57**, 698-710, doi:10.4319/lo.2012.57.3.0698.
168. Bednaršek, N., G. A. Tarling, D. C. E. Bakker, S. Fielding, E. M. Jones, H. J. Venables, P. Ward, A. Kuzirian, B. Lézé, R. A. Feely, and E. J. Murphy, 2012: Extensive dissolution of live pteropods in the Southern Ocean. *Nature Geoscience*, **5**, 881-885, doi:10.1038/ngel635.
169. Doney, S. C., M. Ruckelshaus, J. E. Duffy, J. P. Barry, F. Chan, C. A. English, H. M. Galindo, J. M. Grebmeier, A. B. Hollowed, N. Knowlton, J. Polovina, N. N. Rabalais, W. J. Sydeman, and L. D. Talley, 2012: Climate change impacts on marine ecosystems. *Annual Review of Marine Science*, **4**, 11-37, doi:10.1146/annurev-marine-041911-111611. [Available online at <http://www.annualreviews.org/eprint/fzUZd7Z748TeHmB7p8cn/full/10.1146/annurev-marine-041911-111611>]
- Fabry, V. J., J. B. McClintock, J. T. Mathis, and J. M. Grebmeier, 2009: Ocean acidification at high latitudes: The bellwether. *Oceanography*, **22**, 160-171, doi:10.5670/oceanog.2009.105. [Available online at http://www.tos.org/oceanography/archive/22-4_fabry.pdf]
170. Kunkel, K. E., L. E. Stevens, S. E. Stevens, L. Sun, E. Janssen, D. Wuebbles, and J. G. Dobson, 2013: Regional Climate Trends and Scenarios for the U.S. National Climate Assessment: Part 9. Climate of the Contiguous United States. NOAA Technical Report NESDIS 142-9. 85 pp., National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, Washington, D.C. [Available online at http://www.nesdis.noaa.gov/technical_reports/NOAA_NESDIS_Tech_Report_142-9_Climate_of_the_Contiguous_United_States.pdf]
171. Balan Sarojini, B., P. A. Stott, E. Black, and D. Polson, 2012: Fingerprints of changes in annual and seasonal precipitation from CMIP5 models over land and ocean. *Geophysical Research Letters*, **39**, L21706, doi:10.1029/2012GL053373. [Available online at <http://onlinelibrary.wiley.com/doi/10.1029/2012GL053373/pdf>]
- Polson, D., G. C. Hegerl, X. Zhang, and T. J. Osborn, 2013: Causes of robust seasonal land precipitation changes. *Journal of Climate*, **26**, 6679-6697, doi:10.1175/JCLI-D-12-00474.1. [Available online at <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI-D-12-00474.1>]
172. Wang, J., X. Bai, H. Hu, A. Clites, M. Colton, and B. Lofgren, 2012: Temporal and spatial variability of Great Lakes ice cover, 1973-2010. *Journal of Climate*, **25**, 1318-1329, doi:10.1175/2011JCLI4066.1.

2: OUR CHANGING CLIMATE

SUPPLEMENTAL MATERIAL TRACEABLE ACCOUNTS

Process for Developing Key Messages

Development of the key messages involved discussions of the lead authors and accompanying analyses conducted via one in-person meeting plus multiple teleconferences and email exchanges from February thru September 2012. The authors reviewed 80 technical inputs provided by the public, as well as other published literature, and applied their professional judgment.

Key message development also involved the findings from four special workshops that related to the latest scientific understanding of climate extremes. Each workshop had a different theme related to climate extremes, had approximately 30 attendees (the CMIP5 meeting had more than 100), and the workshops resulted in a paper.⁵⁵ The first workshop was held in July 2011, titled Monitoring Changes in Extreme Storm Statistics: State of Knowledge.⁵² The second was held in November 2011, titled Forum on Trends and Causes of Observed Changes in Heatwaves, Coldwaves, Floods, and Drought.⁴⁸ The third was held in January 2012, titled Forum on Trends in Extreme Winds, Waves, and Extratropical Storms along the Coasts.⁹⁸ The fourth, the CMIP5 results workshop, was held in March 2012 in Hawai'i, and resulted in an analysis of CMIP5 results relative to climate extremes in the United States.⁵⁵

The Chapter Author Team's discussions were supported by targeted consultation with additional experts. Professional expertise and judgment led to determining "key vulnerabilities." A consensus-based approach was used for final key message selection.

KEY MESSAGE #1 TRACEABLE ACCOUNT

Global climate is changing and this change is apparent across a wide range of observations. The global warming of the past 50 years is primarily due to human activities.

Description of evidence base

The key message and supporting text summarizes extensive evidence documented in the climate science literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Evidence for changes in global climate arises from multiple analyses of data from in-situ, satellite, and other records undertaken by many groups over several decades.³ Changes in the mean state have been accompanied by changes in the frequency and nature of extreme events.⁴ A substantial body of analysis comparing the observed changes to a broad range of climate simulations consistently points to the necessity of invoking human-caused changes to adequately explain the observed climate system behavior.^{5,7} The influence of human impacts on the climate system has also been observed in a number of individual climate variables.^{6,12,13,14,15,16,17} A discussion of the slowdown in temperature increase with associated references (for example, Balmaseda et al. 2013; Easterling and Wehner 2009^{19,27}) is included in the chapter.

The Climate Science Supplement Appendix provides further discussion of types of emissions or heat-trapping gases and particles, and future projections of human-related emissions. Supplemental Message 4 of the Appendix provides further details on attribution of observed climate changes to human influence.

New information and remaining uncertainties

Key remaining uncertainties relate to the precise magnitude and nature of changes at global, and particularly regional, scales, and especially for extreme events and our ability to simulate and attribute such changes using climate models. Innovative new approaches to climate data analysis, continued improvements in climate modeling, and instigation and maintenance of reference quality observation networks such as the U.S. Climate Reference Network (<http://www.ncdc.noaa.gov/crn/>) all have the potential to reduce uncertainties.

Assessment of confidence based on evidence

There is **very high** confidence that global climate is changing and this change is apparent across a wide range of observations, given the evidence base and remaining uncertainties. All observational evidence is consistent with a warming climate since the late 1800s.

There is **very high** confidence that the global climate change of the past 50 years is primarily due to human activities, given the evidence base and remaining uncertainties. Recent changes have

been consistently attributed in large part to human factors across a very broad range of climate system characteristics.

KEY MESSAGE #2 TRACEABLE ACCOUNT

Global climate is projected to continue to change over this century and beyond. The magnitude of climate change beyond the next few decades depends primarily on the amount of heat-trapping gases emitted globally, and how sensitive the Earth's climate is to those emissions.

Description of evidence base

The key message and supporting text summarizes extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Evidence of continued global warming is based on past observations of climate change and our knowledge of the climate system's response to heat-trapping gases. Models have projected increased temperature under a number of different scenarios.^{8,32,33}

That the planet has warmed is "unequivocal,"⁸ and is corroborated though multiple lines of evidence, as is the conclusion that the causes are very likely human in origin (see also Appendices 3 and 4). The evidence for future warming is based on fundamental understanding of the behavior of heat-trapping gases in the atmosphere. Model simulations provide bounds on the estimates of this warming.

New information and remaining uncertainties

The trends described in the 2009 report¹ have continued, and our understanding of the data and ability to model the many facets of the climate system have increased substantially.

There are several major sources of uncertainty in making projections of climate change. The relative importance of these changes over time.

In the next few decades, the effects of natural variability will be an important source of uncertainty for climate change projections.

Uncertainty in future human emissions becomes the largest source of uncertainty by the end of this century.

Uncertainty in how sensitive the climate is to increased concentrations of heat-trapping gases is especially important beyond the next few decades. Recent evidence lends further confidence about climate sensitivity (see Appendix 3: Climate Science Supplement).

Confidence Level

Very High

Strong evidence (established theory, multiple sources, consistent results, well documented and accepted methods, etc.), high consensus

High

Moderate evidence (several sources, some consistency, methods vary and/or documentation limited, etc.), medium consensus

Medium

Suggestive evidence (a few sources, limited consistency, models incomplete, methods emerging, etc.), competing schools of thought

Low

Inconclusive evidence (limited sources, extrapolations, inconsistent findings, poor documentation and/or methods not tested, etc.), disagreement or lack of opinions among experts

Uncertainty in natural climate drivers, for example how much solar output will change over this century, also affects the accuracy of projections.

Assessment of confidence based on evidence

Given the evidence base and remaining uncertainties, confidence is **very high** that the global climate is projected to continue to change over this century and beyond.

The statement on the magnitude of the effect also has **very high** confidence.

KEY MESSAGE #3 TRACEABLE ACCOUNT

U.S. average temperature has increased by 1.3°F to 1.9°F since record keeping began in 1895; most of this increase has occurred since about 1970. The most recent decade was the nation's warmest on record. Temperatures in the United States are expected to continue to rise. Because human-induced warming is superimposed on a naturally varying climate, the temperature rise has not been, and will not be, uniform or smooth across the country or over time.

Description of evidence base

The key message and supporting text summarizes extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics

were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Evidence for the long-term increase in temperature is based on analysis of daily maximum and minimum temperature observations from the U.S. Cooperative Observer Network (<http://www.nws.noaa.gov/om/coop/>). With the increasing understanding of U.S. temperature measurements, a temperature increase has been observed, and temperature is projected to continue rising.^{36,37,38} Observations show that the last decade was the warmest in over a century. A number of climate model simulations were performed to assess past, and to forecast future, changes in climate; temperatures are generally projected to increase across the United States.

The section entitled “Quantifying U.S. Temperature Rise” explains the rationale for using the range 1.3°F to 1.9°F in the key message.

All peer-reviewed studies to date satisfying the assessment process agree that the U.S. has warmed over the past century and in the past several decades. Climate model simulations consistently project future warming and bracket the range of plausible increases.

New information and remaining uncertainties

Since the 2009 National Climate Assessment,¹ there have been substantial advances in our understanding of the U.S. temperature record (Appendix 3: Climate Science, Supplemental Message 7).^{36,37,38}

A potential uncertainty is the sensitivity of temperature trends to adjustments that account for historical changes in station location, temperature instrumentation, observing practice, and siting conditions. However, quality analyses of these uncertainties have not found any major issues of concern affecting the conclusions made in the key message (Appendix 3: Climate Science, Supplemental Message 7). (for example, Williams et al. 2012³⁸).

While numerous studies (for example, Fall et al. 2011; Vose et al. 2012; Williams et al. 2012^{37,38}) verify the efficacy of the adjustments, the information base can be improved in the future through continued refinements to the adjustment approach. Model biases are subject to changes in physical effects on climate; for example, model biases can be affected by snow cover and hence are subject to change as a warming climate changes snow cover.

Assessment of confidence based on evidence

Given the evidence base and remaining uncertainties, confidence is **very high** in the key message. Because human-induced warming is superimposed on a naturally varying climate, the temperature rise has not been, and will not be, uniform or smooth across the country or over time.

KEY MESSAGE #4 TRACEABLE ACCOUNT

The length of the frost-free season (and the corresponding growing season) has been increasing nationally since the 1980s, with the largest increases occurring in the western United States, affecting ecosystems and agriculture. Across the United States, the growing season is projected to continue to lengthen.

Description of evidence base

The key message and supporting text summarizes extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Nearly all studies to date published in the peer-reviewed literature (for example, Dragoni et al. 2011; EPA 2012; Jeong et al. 2011^{40,41,43}) agree that the frost-free and growing seasons have lengthened. This is most apparent in the western United States. Peer-reviewed studies also indicate that continued lengthening will occur if concentrations of heat-trapping gases continue to rise. The magnitude of future changes based on model simulations is large in the context of historical variations.

Evidence that the length of the frost-free season is lengthening is based on extensive analysis of daily minimum temperature observations from the U.S. Cooperative Observer Network. The geographic variations in increasing number of frost-free days are similar to the regional variations in mean temperature. Separate analysis of surface data also indicates a trend towards an earlier onset of spring.^{40,41,43,45}

New information and remaining uncertainties

A key issue (uncertainty) is the potential effect on observed trends of climate monitoring station inhomogeneities (differences), particularly those arising from instrumentation changes. A second key issue is the extent to which observed regional variations (more lengthening in the west/less in the east) will persist into the future.

Local temperature biases in climate models contribute to the uncertainty in projections.

Viable avenues to improving the information base are to investigate the sensitivity of observed trends to potential biases introduced by station inhomogeneities and to investigate the causes of observed regional variations.

Assessment of confidence based on evidence

Given the evidence base and remaining uncertainties, confidence is **very high** that the length of the frost-free season (also referred to as the growing season) has been increasing nationally since the 1980s, with the largest increases occurring in the western U.S., affecting ecosystems, gardening, and agriculture. Given the

evidence base, confidence is **very high** that across the U.S., the growing season is projected to continue to lengthen.

KEY MESSAGE #5 TRACEABLE ACCOUNT

Average U.S. precipitation has increased since 1900, but some areas have had increases greater than the national average, and some areas have had decreases. More winter and spring precipitation is projected for the northern United States, and less for the Southwest, over this century.

Description of evidence base

The key message and supporting text summarizes extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Evidence of long-term change in precipitation is based on analysis (for example, Kunkel et al. 2013¹⁷⁰) of daily observations from the U.S. Cooperative Observer Network. Published work shows the regional differences in precipitation.^{47,48} Evidence of future change is based on our knowledge of the climate system's response to heat-trapping gases and an understanding of the regional mechanisms behind the projected changes (for example, IPCC 2007⁸).

New information and remaining uncertainties

A key issue (uncertainty) is the sensitivity of observed precipitation trends to historical changes in station location, rain gauges, and observing practice. A second key issue is the ability of climate models to simulate precipitation. This is one of the more challenging aspects of modeling of the climate system, because precipitation involves not only large-scale processes that are well-resolved by models but small-scale process, such as convection, that must be parameterized in the current generation of global and regional climate models. However, our understanding of the physical basis for these changes has solidified and the newest set of climate model simulations (CMIP5) continues to show high-latitude increases and subtropical decreases in precipitation. For most of the contiguous U.S., studies¹⁷¹ indicate that the models currently do not detect a robust anthropogenic influence to observed changes, suggesting that observed changes are principally of natural origins. Thus, confident projections of precipitation changes are limited to the northern and southern areas of the contiguous U.S. that are part of the global pattern of observed and robust projected changes that can be related to anthropogenic forcing. Furthermore, for the first time in the U.S. National Climate Assessment, a confidence statement is made that some projected precipitation changes are deemed small. It is incorrect to attempt to validate or invalidate climate model simulations of observed trends in these regions and/or seasons, as such simulations are not designed to forecast the precise timing of natural variations.

Shifts in precipitation patterns due to changes in other sources of air pollution, such as sulfate aerosols, are uncertain and are an active research topic.

Viable avenues to improving the information base are to investigate the sensitivity of observed trends to potential biases introduced by station changes, and to investigate the causes of observed regional variations.

A number of peer-reviewed studies (for example, McRoberts and Nielsen-Gammon 2011; Peterson et al. 2013^{47,48}) document precipitation increases at the national scale as well as regional-scale increases and decreases. The variation in magnitude and pattern of future changes from climate model simulations is large relative to observed (and modeled) historical variations.

Assessment of confidence based on evidence

Given the evidence base and remaining uncertainties, confidence is **high** that average U.S. precipitation has increased since 1900, with some areas having had increases greater than the national average, and some areas having had decreases.

Confidence is **high**, given the evidence base and uncertainties, that more winter and spring precipitation is projected for the northern U.S., and less for the Southwest, over this century in the higher emissions scenarios. Confidence is **medium** that human-induced precipitation changes will be small compared to natural variations in all seasons over large portions of the U.S. in the lower emissions scenarios. Confidence is **medium** that human-induced precipitation changes will be small compared to natural variations in the summer and fall over large portions of the U.S. in the higher emissions scenarios.

KEY MESSAGE #6 TRACEABLE ACCOUNT

Heavy downpours are increasing nationally, especially over the last three to five decades. Largest increases are in the Midwest and Northeast. Increases in the frequency and intensity of extreme precipitation events are projected for all U.S. regions.

Description of evidence base

The key message and supporting text summarizes extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Evidence that extreme precipitation is increasing is based primarily on analysis^{52,55,170} of hourly and daily precipitation observations from the U.S. Cooperative Observer Network, and is supported by observed increases in atmospheric water vapor.⁷⁵ Recent publications have projected an increase in extreme precipitation

events,^{52,137} with some areas getting larger increases¹ and some getting decreases.^{54,55}

Nearly all studies to date published in the peer-reviewed literature agree that extreme precipitation event number and intensity have risen, when averaged over the United States. The pattern of change for the wettest day of the year is projected to roughly follow that of the average precipitation, with both increases and decreases across the U.S. Extreme hydrologic events are projected to increase over most of the U.S.

New information and remaining uncertainties

A key issue (uncertainty) is the ability of climate models to simulate precipitation. This is one of the more challenging aspects of modeling of the climate system because precipitation involves not only large-scale processes that are well-resolved by models but also small-scale process, such as convection, that must be parameterized in the current generation of global and regional climate models.

Viable avenues to improving the information base are to perform some long, very high-resolution simulations of this century's climate under different emissions scenarios.

Assessment of confidence based on evidence

Given the evidence base and uncertainties, confidence is **high** that heavy downpours are increasing in most regions of the U.S., with especially large increases in the Midwest and Northeast.

Confidence is **high** that further increases in the frequency and intensity of extreme precipitation events are projected for most U.S. areas, given the evidence base and uncertainties.

KEY MESSAGE #7 TRACEABLE ACCOUNT

There have been changes in some types of extreme weather events over the last several decades. Heat waves have become more frequent and intense, especially in the West. Cold waves have become less frequent and intense across the nation. There have been regional trends in floods and droughts. Droughts in the Southwest and heat waves everywhere are projected to become more intense, and cold waves less intense everywhere.

Description of evidence base

The key message and supporting text summarizes extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Analysis of U.S. temperature records indicates that record cold events are becoming progressively less frequent relative to

record high events.^{60,170} There is evidence for the corresponding trends in a global framework.^{7,66} A number of publications have explored the increasing trend of heat waves.^{7,62,69} Additionally, heat waves observed in the southern Great Plains,¹ Europe,^{7,62} and Russia^{60,66,67} have now been shown to have a higher probability of having occurred because of human-induced climate change.

Some parts of the U.S. have been seeing changing trends for floods and droughts over the last 50 years, with some evidence for human influence.^{13,48,62} In the areas of increased flooding in parts of the Great Plains, Midwest, and Northeast, increases in both total precipitation and extreme precipitation have been observed and may be contributing to the flooding increases. However, when averaging over the entire contiguous U.S., there is no overall trend in flood magnitudes.⁷¹ A number of publications project drought as becoming a more normal condition over much of the southern and central U.S. (most recent references: Dai 2012; Hoerling et al. 2012; Wehner et al. 2011^{75,76}).

Analyses of U.S. daily temperature records indicate that low records are being broken at a much smaller rate than high records, and at the smallest rate in the historical record.^{60,170} However, in certain localized regions, natural variations can be as large or larger than the human induced change.

New information and remaining uncertainties

The key uncertainty regarding projections of future drought is how soil moisture responds to precipitation changes and potential evaporation increases. Most studies indicate that many parts of the U.S. will experience drier soil conditions but the amount of that drying is uncertain.

Natural variability is also an uncertainty affecting projections of extreme event occurrences in shorter timescales (several years to decades), but the changes due to human influence become larger relative to natural variability as the timescale lengthens. Stakeholders should view the occurrence of extreme events in the context of increasing probabilities due to climate change.

Continuation of long term temperature and precipitation observations is critical to monitoring trends in extreme weather events.

Assessment of confidence based on evidence

Given the evidence base and uncertainties, confidence is **high** for the entire key message.

Heat waves have become more frequent and intense, and confidence is **high** that heat waves everywhere are projected to become more intense in the future.

Confidence is **high** that cold waves have become less frequent and intense across the nation.

Confidence is **high** that there have been regional trends in floods and droughts.

Confidence is **high** that droughts in the Southwest are projected to become more intense.

KEY MESSAGE #8 TRACEABLE ACCOUNT

The intensity, frequency, and duration of North Atlantic hurricanes, as well as the frequency of the strongest (Category 4 and 5) hurricanes, have all increased since the early 1980s. The relative contributions of human and natural causes to these increases are still uncertain. Hurricane-associated storm intensity and rainfall rates are projected to increase as the climate continues to warm.

Description of evidence base

The key message and supporting text summarize extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Recent studies suggest that the most intense Atlantic hurricanes have become stronger since the early 1980s.⁹³ While this is still the subject of active research, this trend is projected to continue.^{90,91}

New information and remaining uncertainties

Detecting trends in Atlantic and eastern North Pacific hurricane activity is challenged by a lack of consistent historical data and limited understanding of all of the complex interactions between the atmosphere and ocean that influence hurricanes.^{87,88}

While the best analyses to date^{87,91} suggest an increase in intensity and in the number of the most intense hurricanes over this century, there remain significant uncertainties.

Assessment of confidence based on evidence

Given the evidence base and remaining uncertainties:

High confidence that the intensity, frequency, and duration of North Atlantic hurricanes, as well as the frequency of the strongest (Category 4 and 5) hurricanes, have increased substantially since the early 1980s.

Low confidence in relative contributions of human and natural causes in the increases.

Medium confidence that hurricane intensity and rainfall rates are projected to increase as the climate continues to warm.

KEY MESSAGE #9 TRACEABLE ACCOUNT

Winter storms have increased in frequency and intensity since the 1950s, and their tracks have shifted northward over the United States. Other trends in severe storms, including the intensity and frequency of tornadoes, hail, and damaging thunderstorm winds, are uncertain and are being studied intensively.

Description of evidence base

The key message and supporting text summarize extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Current work⁹⁸ has provided evidence of the increase in frequency and intensity of winter storms, with the storm tracks shifting poleward,^{99,100} but some areas have experienced a decrease in winter storm frequency.¹ Although there are some indications of increased blocking (a large-scale pressure pattern with little or no movement) of the wintertime circulation of the Northern Hemisphere,¹⁰⁶ the assessment and attribution of trends in blocking remain an active research area.¹⁰⁷ Some recent research has provided insight into the connection of global warming to tornadoes and severe thunderstorms.⁹⁶

New information and remaining uncertainties

Winter storms and other types of severe storms have greater uncertainties in their recent trends and projections, compared to hurricanes (Key Message 8). The text for this key message explicitly acknowledges the state of knowledge, pointing out "what we don't know." There has been a sizeable upward trend in the number of storm events causing large financial and other losses.⁹⁵

Assessment of confidence based on evidence

Given the evidence base and remaining uncertainties:

Confidence is **medium** that winter storms have increased slightly in frequency and intensity, and that their tracks have shifted northward over the U.S.

Confidence is **low** on other trends in severe storms, including the intensity and frequency of tornadoes, hail, and damaging thunderstorm winds.

KEY MESSAGE #10 TRACEABLE ACCOUNT

Global sea level has risen by about 8 inches since reliable record keeping began in 1880. It is projected to rise another 1 to 4 feet by 2100.

Description of evidence base

The key message and supporting text summarize extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

Nearly all studies to date published in the peer-reviewed literature agree that global sea level has risen during the past century, and that it will continue to rise over the next century.

Tide gauges throughout the world have documented rising sea levels during the last 130 years. This rise has been further confirmed over the past 20 years by satellite observations, which are highly accurate and have nearly global coverage. Recent studies have shown current sea level rise rates are increasing^{112,123} and project that future sea level rise over the rest of this century will be faster than that of the last 100 years (Appendix 3: Climate Science, Supplemental Message 12).¹²³

New information and remaining uncertainties

The key issue in predicting future rates of global sea level rise is to understand and predict how ice sheets in Greenland and Antarctica will react to a warming climate. Current projections of global sea level rise do not account for the complicated behavior of these giant ice slabs as they interact with the atmosphere, the ocean and the land. Lack of knowledge about the ice sheets and their behavior is the primary reason that projections of global sea level rise includes such a wide range of plausible future conditions.

Early efforts at semi-empirical models suggested much higher rates of sea level rise (as much as 6 feet by 2100).^{115,117} More recent work suggests that a high end of 3 to 4 feet is more plausible.^{115,116,121} It is not clear, however, whether these statistical relationships will hold in the future or that they are appropriate in modeling past behavior, thus calling their reliability into question.¹¹⁸ Some decision-makers may wish to consider a broader range of scenarios such as 8 inches or 6.6 feet by 2100 in the context of risk-based analysis.^{122,123}

Assessment of confidence based on evidence

Given the evidence and uncertainties, confidence is **very high** that global sea level has risen during the past century, and that it will continue to rise over this century, with **medium** confidence that global sea level rise will be in the range of 1 to 4 feet by 2100.

KEY MESSAGE #11 TRACEABLE ACCOUNT

Rising temperatures are reducing ice volume and surface extent on land, lakes, and sea. This loss of ice is expected to continue. The Arctic Ocean is expected to become essentially ice free in summer before mid-century.

Description of evidence base

The key message and supporting text summarize extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

There have been a number of publications reporting decreases in ice on land¹⁴⁷ and glacier recession. Evidence that winter lake ice and summer sea ice are rapidly declining is based on satellite data and is incontrovertible.^{111,172}

Nearly all studies to date published in the peer-reviewed literature agree that summer Arctic sea ice extent is rapidly declining,¹³¹ with even greater reductions in ice thickness^{132,133} and volume,¹³⁴ and that if heat-trapping gas concentrations continue to rise, an essentially ice-free Arctic ocean will be realized sometime during this century (for example, Stroeve et al. 2012¹³⁶). September 2012 had the lowest levels of Arctic ice in recorded history. Great Lakes ice should follow a similar trajectory. Glaciers will generally retreat, except for a small percentage of glaciers that experience dynamical surging.¹¹¹ Snow cover on land has decreased over the past several decades.¹⁴⁵ The rate of permafrost degradation is complicated by changes in snow cover and vegetation.

New information and remaining uncertainties

The rate of sea ice loss through this century is a key issue (uncertainty), which stems from a combination of large differences in projections between different climate models, natural climate variability and uncertainty about future rates of fossil fuel emissions. This uncertainty is illustrated in Figure 2.29, showing the CMIP5-based projections (adapted from Stroeve et al. 2012¹³⁶).

Viable avenues to improving the information base are determining the primary causes of the range of different climate model projections and determining which climate models exhibit the best ability to reproduce the observed rate of sea-ice loss.

Assessment of confidence based on evidence

Given the evidence base and uncertainties, confidence is **very high** that rising temperatures are reducing ice volume and extent on land, lakes, and sea, and that this loss of ice is expected to continue.

Confidence is **very high** that the Arctic Ocean is projected to become virtually ice-free in summer by mid-century.

KEY MESSAGE #12 TRACEABLE ACCOUNT

The oceans are currently absorbing about a quarter of the carbon dioxide emitted to the atmosphere annually and are becoming more acidic as a result, leading to concerns about intensifying impacts on marine ecosystems.

Description of evidence base

The key message and supporting text summarize extensive evidence documented in the climate science peer-reviewed literature. Technical Input reports (82) on a wide range of topics were also reviewed; they were received as part of the Federal Register Notice solicitation for public input.

The oceans currently absorb a quarter of the CO₂ the caused by human activities.¹⁵⁵ Publications have shown that this absorption causes the ocean to become more acidic (for example, Doney et al. 2009¹⁵⁴). Recent publications demonstrate the adverse effects further acidification will have on marine life.^{158,165,169}

New information and remaining uncertainties

Absorption of CO₂ of human origin, reduced pH, and lower calcium carbonate (CaCO₃) saturation in surface waters, where the bulk of oceanic production occurs, are well verified from models, hydrographic surveys, and time series data.¹⁵⁸ The key issue (uncertainty) is how future levels of ocean acidity will affect marine ecosystems.

Assessment of confidence based on evidence

Given the evidence base and uncertainties, confidence is **very high** that oceans are absorbing about a quarter of emitted CO₂.

Very high for trend of ocean acidification; **low-to-medium** for intensifying impacts on marine ecosystems. Our present understanding of projected ocean acidification impacts on marine organisms stems largely from short-term laboratory and mesocosm experiments, although there are also examples based on actual ocean observations; consequently, the response of individual organisms, populations, and communities of species to more realistic, gradual changes still has large uncertainties.

	Permit No.	Opened	Contractor
1	00-00000063	1/7/2000	Crime Buster
2	00-00001210	5/8/2000	Southernmost Signs
3	00-00001896	7/10/2000	Benson Electric
4	00-00004000	11/20/2000	D & J Industries
5	01-00002459	7/3/2001	Southernmost Signs
6	01-00003824	11/29/2001	DL Porter
7	01-00003928	12/10/2001	Cert Lower Keys Plumbing
8	02-00000734	3/7/2002	Jimmy Nath
9	02-00000889	4/12/2002	Benson Electric
10	02-00002641	9/24/2002	Castro Construction
11	02-00002794	10/9/2002	M.E.E. Inc
12	02-00002977	10/3/2002	DL Porter
13	02-00003329	12/9/2002	Southernmost Signs
14	03-00002368	7/2/2003	Hauber, Inc
15	04-00001465	5/4/2004	Kennedy Electric
16	04-00002720	8/17/2004	D & V Commercial
17	05-00001011	3/29/2005	Cross Key Marine
18	08-00004380	11/26/2008	MMFC Inc
19	08-00004409	12/2/2008	Dan Ace Roofing
20	09-00003738	12/29/2009	Suburban Propane
21	14-00001911	4/30/2014	City of Key West

A & B MARINA OPEN PERMITS

Type	Status	
Security	Permit Printed	Expired/Extended
Sign Application	Permit Printed	Expired/Extended
Electric	Permit Printed	Expired/Extended
Roofing	Permit Printed	Expired/Extended
Sign application	Permit Printed	Expired/Extended
Docks	Permit Printed	Expired/Extended
Plumbing	Permit Printed	Expired/Extended
Painting	Permit Printed	closed
Electric	Permit Printed	Expired/Extended
Renovation/conversion	Permit Printed	Expired/Extended
Electric	Permit Printed	Expired/Extended
Renovation/conversion	Permit Printed	Expired/Extended
Sign application	Permit Printed	Expired/Extended
Renovation/conversion	Permit Printed	Expired/Extended
Mechanical	Permit Printed	Expired/Extended
Mechanical//AC	Permit Printed	Expired/Extended
Awnings	Permit Printed	Expired/Extended
Renovation/conversion	Permit Printed	Expired/Extended
Roofing	Permit Printed	Expired/Extended
Plumbing	Permit Printed	Expired/Extended
Electric	Permit Printed	PERMIT PRINTED

Ms. Emily Schemper, Assistant Director
August 16, 2018
Page 22

Exhibit "C"

Marine Theft Article

Marine-related thefts on rise throughout the Florida Keys

KEYNOTER STAFF

June 21, 2017 10:15 AM

As dependable as the rains in the summer are marine-related thefts in the Keys. And they are on the uptick, the Monroe County Sheriff's Office says. The agency says:

- On Friday, the property manager of the Lion's Lair Travel Park on Grassy Key reported a motor missing from a 2016 20-foot Robaldo boat. The motor, a 2016 Yamaha 150 horse power, was last seen at the end of May. The boat belongs to part-time tenants at the park who said no one had permission to take it.
- Saturday, the property manager met with Deputy Shannon Jones to report two part-time residents who store their boats on the property were missing the motors from their boats. One of the motors is a 2012 Yamaha four-stroke 150 horse power and the other is a 2013 Yamaha four-stroke 200 horse power.
- On Sunday, Deputy Anthony Lopez responded to a home on Aster Terrace in Key Haven to a report of the lower unit on a Mercury 150 horsepower being stolen and replaced "with a much cheaper one," the Sheriff's Office said.
- On June 9, Deputy Vincent Torres responded to the Edgewater Lodge in Marathon to a report of fishing equipment stolen from a Lake Worth man. He was staying at the hotel and left three fishing poles in the rod holders on his boat the night of the 8th; when he woke up, they were gone.
- On June 10, Deputy Rosary Ponce responded to Hawks Cay Marina on Duck Key to a report of fishing equipment stolen. The owner said he left his rods and reels in the rod holders on his boat overnight and when he returned in the morning, the most expensive rod and reel combination, which included a Kristal Electric fishing reel valued at \$3,000, was missing.

Most boat, motor, and fishing and diving equipment thefts can be easily prevented with minimum effort. At the end of the day, remove your gear from the boat and lock it up.

- (2) Outdoor storage and outdoor retail sales as a principal use shall not be allowed.

Sec. 130-135. Big Pine Key Commercial Community Center overlay (BPCCC).

- (a) Purpose. The purpose of this district is to identify a defined geographic development focal area according to the adopted Master Plan for Future Development of Big Pine Key and No Name Key. The overlay shall encourage the concentration of new nonresidential floor area and be located at the intersection of U.S. 1 and Key Deer Boulevard, Wilder Road and Chapman Street.
- (b) Application. The maximum permitted densities shall be in accordance with the underlying land use zoning district. The use within the overlay district shall be subject to all land development regulations of the underlying zoning district. The following regulations apply within this overlay:
- (1) Small individual buildings of 2,500 square feet of floor area or less fronting both U.S. 1 and Key Deer Boulevard are encouraged, with commercial uses on the lower floor and employee housing on the upper floor.
 - (2) The maximum F.A.R. for nonresidential uses shall be 0.40.
 - (3) Parking lots in front of nonresidential uses are discouraged, although on-street parking may occur where appropriate.
 - (4) Building front setbacks are reduced with the majority of the building facade on the required building line.
 - (5) Arcades, colonnades, open porches, canopies, awnings, balconies may be permitted to encroach on the frontage.
 - (6) NROGO allocation awards of floor area exceeding 2,500 square feet per site are permitted within the overlay.
 - (7) The transfer of nonresidential floor area from within the Big Pine and No Name Key subarea to the overlay is encouraged.

Sec. 130-136. Reserved for the Lower Sugarloaf Community Center overlay (LSCC).

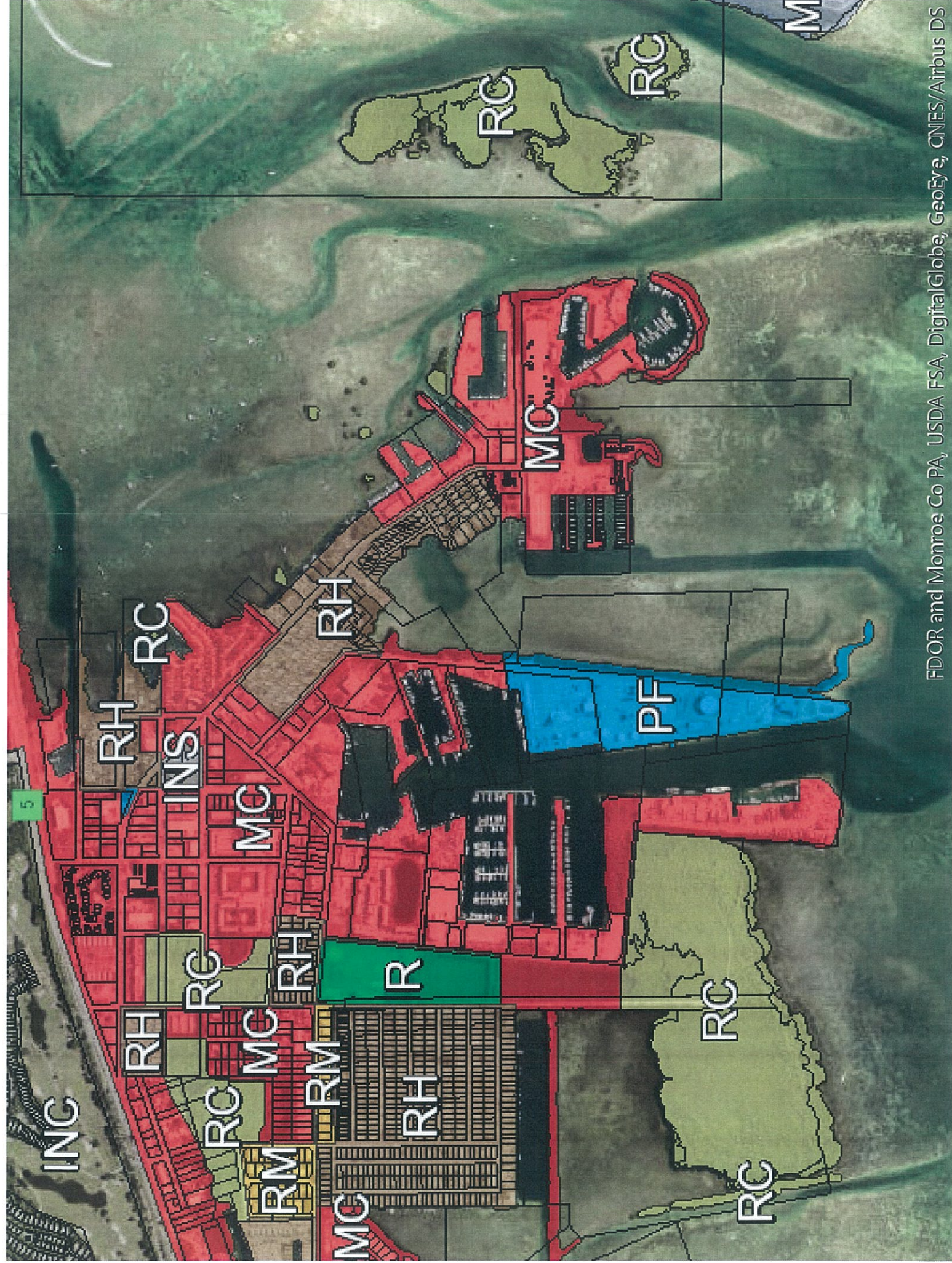
Sec. 130-137. Reserved for the Cudjoe Community Center overlay (CCC).

Sec. 130-138. Reserved for the Summerland Community Center overlay (SCC).

Sec. 130-139. Reserved for the Ramrod Community Center overlay (RCC).

Sec. 130-140. Reserved for the Safe Harbor Community Center overlay (SHCC).

Secs. 130-141—130-155. Reserved.





Overview



Legend

- Major Roads
- Centerline
- Hooks
- Road Center
- Rights of Way
- Condo Building
- Conservation Easement
- Key Names
- Parcels

Date created: 8/14/2018
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Developed by  Schneider
GEOSPATIAL

3 D OF KEY WEST INC
1415 FLAGLER AVE
KEY WEST, FL 33040

415 BAHAMA KEY CORP
1331 Duncan St
Key West, FL 33040

415 BAHAMA KEY CORP
1331 Duncan St
Key West, FL 33040

5421 ROBYN LLC
PO Box 510044
Key Colony Beach, FL 33051

5730 FOURTH AVENUE LLC
PO BOX 169
KEY WEST, FL 33041

5730 FOURTH AVENUE LLC
PO BOX 169
KEY WEST, FL 33041

6400 2ND STREET LLC
PO Box 4315
Key West, FL 33041

6436 2ND ST LLC
7702 Santa Margherita Way
Naples, FL 34109

6436 2ND ST LLC
7702 Santa Margherita Way
Naples, FL 34109

ADRION MICHELLE A
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ALFARO CARIDAD L/E
46 D 11th Ave
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HOLLYWOOD, FL 33021

ANDREWS STEWART J AND LEDA N
2110 STAPLES AVE
KEY WEST, FL 33040

ARENCIBIA FRANCISCO
24 E 11th Ave
Key West, FL 33040

ARNOLDS AUTO AND MARINE REPAIR IN
23 Flipper Rd
Key West, FL 33040

ARNOLDS AUTO AND MARINE REPAIR IN
23 FLIPPER RD
KEY WEST, FL 33040

ARNOLDS AUTO AND MARINE REPAIR IN
23 FLIPPER RD
KEY WEST, FL 33040

ASHE REBEKAH G
918 B Kennedy Dr
Key West, FL 33040

B 23 EIGHTH AVENUE LLC
1101 17th St
Key West, FL 33040

BAMA ONE LLC
6810 FRONT ST
KEY WEST, FL 33040

BARTON DONALD J JR
1502 UNITED ST
KEY WEST, FL 33040

BARTON DONALD J JR
1502 UNITED ST
KEY WEST, FL 33040

BARTON DONALD J JR
1502 UNITED ST
KEY WEST, FL 33040

BARTON DONALD J JR
1502 UNITED ST
KEY WEST, FL 33040

BARTON DONALD JAY JR
1502 UNITED ST
KEY WEST, FL 33040

BATTLE CALVIN
50 7th Ave
Key West, FL 33040

BAUCOM PROPERTY HOLDINGS 2 LLC
261 GOLF CLUB DR
KEY WEST, FL 33040

BERNSTEIN BENJAMIN RESIDUARY TR E
PO BOX 2455
KEY WEST, FL 33045

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KEY WEST, FL 33045

BERNSTEIN BENJAMIN TRUST B
PO BOX 2455
KEY WEST, FL 33045

BERNSTEIN BENJAMIN TRUST B
PO BOX 2455
KEY WEST, FL 33045

BERNSTEIN BENJAMIN TRUST B
PO BOX 2455
KEY WEST, FL 33045

BERNSTEIN JORDAN M
PO BOX 2455
KEY WEST, FL 33045

BERNSTEIN JORDAN M
PO BOX 2455
KEY WEST, FL 33045

BERNSTEIN JORDAN M
PO BOX 2455
KEY WEST, FL 33045

BERNSTEIN ROGER T/C
P O BOX 2455
KEY WEST, FL 33045

BERULDSSEN DIANE
25A 7TH AVE
KEY WEST, FL 33040

BLANCO AMADA AVILA
5406 3rd Ave
Key West, FL 33040

BLANCO GERARDO
49 B 9th Ave
Key West, FL 33040

BOARD OF COUNTY COMMISSIONERS C
500 WHITEHEAD ST
KEY WEST, FL 33040

BOARD OF COUNTY COMMISSIONERS C
500 Whitehead St
Key West, FL 33040

BOARD OF COUNTY COMMISSIONERS C
500 Whitehead St
Key West, FL 33040

BOYDS CAMPGROUND LTD
6401 MALONEY AVE
KEY WEST, FL 33040

BOZA MARY J
46C 10TH AVE
KEY WEST, FL 33040

BRETOUX FANFAN
5423 Robyn Ln
Key West, FL 33040

BRINGLE STEVEN A AND JUDY M
19 AMARYLLIS DR
KEY WEST, FL 33040

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KEY WEST, FL 33040

BROGLI ALBERTA A
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KEY WEST, FL 33040

BROGLI JR KENNETH E
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Key West, FL 33040

BROGLI KENNETH E AND ALBERTA
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KEY WEST, FL 33040

BROGLI KENNETH E AND ALBERTA
2811 SEIDENBERG AVE
KEY WEST, FL 33040

BROGLI KENNETH E AND ALBERTA
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CABRERA LEONARDO
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CONSTELLATION YACHTS INC
6811 Shrimp Rd
Key West, FL 33040

CONSTELLATION YACHTS INC
6811 SHRIMP RD
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COOPER JAMES ROBERT AND NANCY S
22 AMARYLLIS DR
KEY WEST, FL 33040

COOPER JAMES ROBERT AND NANCY S
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COTTON OF KEY WEST LIMITED PARTNE
PO BOX 2652
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C/O PARK VILLAGE HOMEOWNERS ASS
201 FRONT ST STE 110
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COWLES CHRIS AND MELODY
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West Palm Beach, FL 33410

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1217 KNOWLES LN
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DION FAMILY REVOCABLE TRUST 11/3/2
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DOT STATE OF FLORIDA
605 SUWANNEE ST
TALLAHASSEE, FL 32399

DURAN GHEOFRE
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DURAN WILLIAM
1209 19TH TER
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E22 11TH AVENUE LLC
5585 2ND AVE STE 2
KEY WEST, FL 33040

ESTEVEZ MANUEL DELPINO
5419 Robyn Ln
Key West, FL 33040

FIFTH AVENUE HARBOR SHOPS LLC
1424 S Roosevelt Blvd
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FLA KEYS AQUEDUCT AUTHORITY
1100 KENNEDY DR
KEY WEST, FL 33040

FLA KEYS AQUEDUCT COMM
1100 KENNEDY DR
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FLORIDA KEYS ELECTRIC INC FLA KEYS
5730 2ND AVE STE 1
KEY WEST, FL 33040

FLORIDA KEYS ELECTRIC INC
5730 2ND AVE STE 1
KEY WEST, FL 33040

FLORIDA KEYS ELECTRIC INC
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FLUKER JEFFREY W
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GARCIA YRAIDA CISNEROS
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GINOLA LLC
509 Duval St
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GROSBY 2 SAM INC
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HERNANDEZ ROMEO
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KEY HOME AND INVESTMENTS INC
3152 Northside Dr
Key West, FL 33040

KEY WEST BAPTIST TEMPLE INC
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KEY WEST, FL 33045

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KEY WEST, FL 33045

KEY WEST BAPTIST TEMPLE INC
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LONGSTOCK II LLC
7009 Shrimp Rd
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7009 Shrimp Rd
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Key West, FL 33040

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Key West, FL 33040

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Key West, FL 33040

LONGSTOCK II LLC
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1018 17TH ST
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LOUCKS MARNA
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LUCIANO ALFREDO J
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SANTA ROSA BEACH, FL 32459

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MERIDIAN WEST LTD
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MONFORT DENNY
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MONROE COUNTY
500 WHITEHEAD ST
KEY WEST, FL 33040

MONROE COUNTY
500 WHITEHEAD ST
KEY WEST, FL 33040

MONROE COUNTY FL
500 WHITEHEAD ST
KEY WEST, FL 33040

MORALES CARIDAD
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MORALES JOSE O
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MORALES MADELINE M
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PARK PLACE UNIT 13 LLC
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KEY WEST, FL 33045

PARK PLACE UNIT 13 LLC
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PARK PLACE UNIT 13 LLC
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PARK PLACE UNIT 3 LLC
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PARK PLACE UNIT 4 LLC
PO BOX 5766
KEY WEST, FL 33045

PARK PLACE UNIT 4 LLC
PO BOX 5766
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PARK PLACE UNITS 10-11 LLC
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PARK PLACE UNITS 10-11 LLC
PO BOX 5766
KEY WEST, FL 33045

PARK PLACE UNITS 1-2 LLC
PO BOX 5766
KEY WEST, FL 33045

PARK PLACE UNITS 1-2 LLC
PO BOX 5766
KEY WEST, FL 33045

PARK PLACE UNITS 6-7 LLC
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PARK PLACE UNITS 6-7 LLC
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KEY WEST, FL 33045

PARK PLACE UNITS 8-9 LLC
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Additional Information added to File 2018-169

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September 28, 2021

VIA EMAIL

Emily Schemper, Senior Director
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2798 Overseas Highway, Suite 400
Marathon, FL 33050
Email: Schemper-Emily@MonroeCounty-FL.Gov

RE: Fifth Amendment to Proposed Text Amendment to Provide Text for Section 130-140 of the Monroe County Land Development Regulations (File No. 2018-169)

Dear Emily,

Please allow this letter to serve as a fifth amendment to the Land Development Regulation Text Amendment Application (“**Original Application**”) made on behalf of Longstock II, LLC, a Florida limited liability company (“**Applicant**”), received by Monroe County on August 15, 2018, first amended on December 10, 2018, and further amended on March 18, 2019, July 15, 2020, and August 6, 2020, using the most recently amendment as the baseline for the revisions.

A copy of this fifth amendment is enclosed, please date-stamp and return the copy using the enclosed self-addressed envelope.

Additions are underlined in blue, and deletions are struck through in ~~red~~. Please note that the baseline for the revisions is the amendment submitted on July 15, 2020.

The Proposed Amendment

Sec. 130-140. Safe Harbor Community Center Overlay District (SHCC).

1. *Purpose and intent.* The purpose of the Safe Harbor Community Center (SHCC) Overlay District is to implement applicable goals, objectives, and policies of the Comprehensive Plan promoting a working waterfront and public access to the marine and coastal waters and allowing for redevelopment in a non-environmentally sensitive area of the Lower Keys for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses, and preserving and protecting coastal and natural resources and the community character. The intent is to protect and maintain the character of the Safe Harbor area while allowing redevelopment/infill within the overlay district, an area that is the result of dredge and fill which has been developed with nonresidential uses.

Furthermore, the purpose of the SHCC Overlay District is to implement the goals, strategies and action items of the Stock Island – Key Haven Livable Communikeys Plan and the Stock Island Harbor Preservation / Redevelopment and Intra-Island Corridor Enhancement Plan to encourage redevelopment that maintains and enhances the economic diversity of the community; direct future residential and commercial activities to areas most suitable in the Planning Area; preserve and increase the number of housing units available for low and very low income families; maintain affordable housing while providing for a mix of housing options; maintain and enhance the community character of a diverse and unique mixed-use community, separate from Key West; and maintain and enhance natural resources, taking care to improve and protect water quality and beautify and preserve open space; protect shoreline access for water based recreational activities; provide for all residential of the planning area a safe, efficient and viable transportation system for the movement of people and goods; provide for a safe, efficient, and viable transportation system for the movement of people and goods; preserve the working waterfront, revitalize the port area while improving the physical setting, accommodate a diversity of water-oriented activities and people, connect the port area to the surrounding community, provide access along the waterfront and to respect and reinforce the heritage and character of the community.

2. *Boundary.* The Safe Harbor Community Center Overlay District shall be shown as an overlay district on the Official Land Use District Map. The Safe Harbor Community Center Overlay District shall be comprised of that certain area bounded by Front Street to the east, Fourth Avenue to the north, Fifth Avenue to the north, Shrimp Road to the west, and Shrimp Road to the south but excluding that certain property owned by the Utility Board of the City of Key West and Florida Keys Aqueduct Authority bounded by Front Street to the east.



SHCC Overlay District Boundaries outlined in Orange

3. In accordance with Policies 101.8.5 and 101.9.2 and Section 102-57(f), lawfully established nonconforming non-residential structures which are non-conforming as to intensity within the Safe Harbor Community Center Overlay District as of the effective date of this section may be rebuilt to the preexisting use, building footprint and configuration without increase in density or intensity of use, even if 100 percent destroyed provided that they are rebuilt to the preexisting use and registered in accordance with Section 102-55.
4. In accordance with Sections 138-51(c) and 138-50(j)(3), NROGO allocations or transfers over 10,000 square feet shall be permitted into the Safe Harbor Community Center Overlay District.
5. In order to preserve and promote recreational and commercial working waterfront uses, the following criteria and incentives in furtherance of Policy 101.5.6, shall apply, and be available, to all parcels within the Safe Harbor Community Center Overlay District that are zoned Maritime Industries (MI) and have a Mixed-Use Commercial (MC) FLUM Designation as follows:
 1. When a mixture of uses is proposed for parcels designated as MI land use (zoning) district, working waterfront and water dependent uses, such as marina, fish house/market, boat repair, boat building, boat storage, or other similar uses, shall be preserved by maintaining a minimum of 35% of the upland area of the property for those uses.

To incentivize additional preservation of recreational and commercial working waterfront uses, the following shall be available:

 - a. For the preservation of 36—50% of the upland area of property for working waterfront and water dependent uses, up to 20,000 square feet of nonresidential floor area from the NROGO bank shall be provided to the property; and
 - b. For the preservation of 50% or more of the upland area of property for working waterfront and water dependent uses, the residential density, including Hotel/Motel density, on the property may be developed pursuant to the maximum net density standard without the use of TDRs.
 - c. If parcels do not preserve 50% or more of the upland area of the property for working waterfront and water dependent uses, TDRs can be utilized to attain the density between the allocated density standard up to the maximum net density standard.
 - d. Deed restricted affordable dwelling units may be built up to the maximum net density without the use of TDRs.
6. Within the boundaries of the Safe Harbor Community Center Overlay District, the permitted and conditional uses in subsections (1)(b) and (c) shall be enforced, in lieu of Section 130-85, Maritime Industries, and Section 130-88, Mixed Use; the maximum hotel/motel density in subsection (2) shall be enforced in lieu of Section 130-162; and the nonresidential land use intensities in subsection (3) shall be enforced in lieu of Section 130-164, maximum nonresidential land use intensities and district open space.

- (1) *Permitted uses.* The following uses are permitted as of right in the Safe Harbor Community Center (SHCC) Overlay District:
1. Accessory uses;
 2. Attached and detached dwellings involving less than six units, designated as employee housing as provided for in Section 139-1;
 3. Attached wireless communications facilities, as accessory uses, pursuant to section 146-5(d);
 4. Collocations on existing antenna-supporting structures, pursuant to Section 146-5(c);
 5. Commercial apartments involving less than six dwelling units, but tourist housing uses, vacation rental use, of commercial apartments is prohibited.
 6. Commercial fishing;
 7. Commercial recreational uses limited to:
 - a. Bowling alleys;
 - b. Tennis and racquet ball courts;
 - c. Miniature golf and driving ranges;
 - d. Theaters;
 - e. Health clubs; and
 - f. Swimming pools;
 8. Commercial retail, restaurant uses, or any combination thereof, of less than 5,000 square feet of floor area;
 9. Detached dwellings within the Mixed Use (MU) Zoning District;
 10. Institutional residential uses, involving less than ten dwelling units or rooms within the Mixed Use (MU) Zoning District;
 11. Institutional uses;
 12. Light industrial uses;
 13. Office uses of less than 5,000 square feet of floor area;
 14. Public buildings and uses;
 15. Replacement of an existing antenna-supporting structure pursuant to Section 146-5(b);
 16. Satellite earth stations, as accessory uses, pursuant to section 146-5(f);
 17. Stealth wireless communications facilities, as accessory uses, pursuant to section 146-5(e); and
 18. Wastewater nutrient reduction cluster systems that serve less than ten residences; provided that:
 - a. The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;

- b. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally consistent with the character of the surrounding community and shall minimize the impact of any outdoor storage, temporary or permanent; and
 - c. In addition to any district boundary buffers set forth in chapter 114, article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
 - i. One native canopy tree for every 25 linear feet of screening structure;
 - ii. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 - iii. The planting bed shall be installed as set forth in chapter 114, article IV; and
 - iv. A solid fence may be required upon determination by the planning director.
- (2) The following uses are permitted as minor conditional uses in the Safe Harbor Community Center (SHCC) Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:
 - 1. Agricultural uses, limited to mariculture, provided that:
 - a. The parcel proposed for development is separated from any established residential uses by at least a class C bufferyard;
 - b. All outside storage areas are screened from adjacent uses by a solid fence, wall, or hedge at least six feet in height;
 - 2. Attached and detached dwellings involving six to 18 units, designated as employee housing as provided for in Section 139-1.
 - 3. Commercial apartments involving up to 18 dwelling units, provided that:
 - a. The hours of operation of the commercial uses are compatible with residential uses;
 - b. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 - c. Tourist housing uses, including vacation rental uses, of commercial apartments are prohibited;

4. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, of greater than 5,000 but less than 10,000 square feet or floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;

In no case shall parcels within the Maritime Industries (MI) zoning district contain more than 5,000 square feet of floor area of commercial retail.

5. Commercial retail, office, restaurant uses, or any combination thereof, of high intensity, and of less than 5,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;

In no case shall parcels within the Maritime Industries (MI) zoning district contain more than 5,000 square feet of floor area of commercial retail.

6. Hotels of fewer than 50 rooms, provided that one or more of the following amenities is available to guests:
 - a. Swimming pool;
 - b. Docking Facilities; or
 - c. Tennis courts;
7. New antenna-supporting structures, pursuant to Section 146-5(a).

(3) The following uses are permitted as major conditional uses in the Safe Harbor Community Center Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:

1. Attached and detached dwelling units involving more than 18 units, designated as employee housing as provided for in Section 139-1.
2. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, of greater than 10,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;

In no case shall parcels within the Maritime Industries (MI) zoning district contain more than 5,000 square feet of floor area of commercial retail.

3. Commercial recreation uses (indoor and outdoor), including amusement or sea life parks and drive-in theaters, provided that:

- a. The parcel of land proposed for development does not exceed five acres;
 - b. The parcel proposed for development is separated from any established residential use by a class C bufferyard;
 - c. All outside lighting is designed and located so that light does not shine directly on any established residential use; and
 - d. The parcel is within the Mixed Use (MU) zoning district.
- 4. Hotels providing 50 or more rooms, provided that:
 - a. The hotel has restaurant facilities on the premises; and
 - b. One or more of the following amenities is available to guests:
 - i. Swimming pool; or
 - ii. Docking facilities; or
 - iii. Tennis courts; and
 - c. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- 5. Marinas, provided that:
 - a. The parcel proposed for development has access to water at least four feet below mean sea level at mean low tide;
 - b. The sale of goods and services is limited to fuel, food, boating, diving and sport fishing products;
 - c. All outside storage areas are screened from adjacent uses by a solid fence, wall, or hedge at least six feet in height; and
 - d. Each nonwaterside perimeter setback of the parcel proposed for development must have a class C bufferyard within a side yard setback of no less than ten feet; and
 - e. New and existing marine facilities, including marinas, with ten slips or more, or one live-aboard-slip, must provide dedicated sewage pump-out facilities or services.
- 6. Wastewater treatment facilities and wastewater treatment collection systems serving uses located in any land use district, provided that:
 - a. The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;
 - b. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally consistent with the character of the surrounding community and minimize the impact of any outdoor storage, temporary or permanent; and

- c. In addition to any district boundary buffers set forth in Chapter 114, Article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
- i. One native canopy tree for every 25 linear feet of screening structure;
 - ii. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 - iii. The planting bed shall be installed as set forth in Chapter 114, Article IV; and
 - iv. A solid fence may be required upon determination by the planning director.
- (4) *Allocated Density for Residential Dwelling Units.* For purposes of this overlay district, properties shall maintain the allocated density for residential dwelling units permitted under the existing zoning districts.
- (5) *Maximum Net Density for Residential Dwelling Units.* For purposes of this overlay district, properties shall maintain the maximum net density for residential dwelling units permitted under the existing zoning districts.
- (6) *Allocated Density for Hotel/Motel.* For purposes of this overlay district, properties shall maintain the allocated density for hotel/motel permitted under the existing zoning districts.
- (7) *Maximum Densities for Hotel/Motel and Minimum Open Space.* For purposes of this overlay district, properties shall maintain the maximum net density for residential dwelling units permitted under the existing zoning districts.
- (8) *Maximum Nonresidential Floor Area for Principal Structures.* For the purposes of this overlay district, uses with corresponding intensity thresholds shall be cumulative and shall be in accordance with the following table:

Land Use	Maximum Floor Area Ratio	Minimum Open Space Ratio ^(a)
Low Intensity Commercial Retail or Restaurant	0.45	0.20
Medium Intensity Commercial Retail or Restaurant	0.45	0.20
High Intensity Commercial Retail or Restaurant	0.30	0.20
Office	0.50	0.20
Commercial Fishing	0.45	0.20
Light Industrial	0.60 ^(b)	0.20
Heavy Industrial (re-development only)	0.40	0.20
Institutional	0.30	0.20
Public Building/Uses	0.60	0.20

Agriculture (Mariculture)	0.45	0.20
Commercial Recreation	0.25	0.20
<p>(a) Additional open space requirements may apply based on environmental protection criteria – see additional open space ratios in Chapter 118. In accordance with Section 101-2(1), the most restrictive of these ratios applies.</p> <p>(b) For properties within the Safe Harbor Community Center Overlay District with Light Industrial land use, the maximum floor area ratio shall be 0.60 in accordance with Policy 101.5.25 of the Comprehensive Plan as of its effective date. Only properties with an Industrial FLUM within the Safe Harbor Community Center Overlay District shall have a maximum FAR of 0.60. Properties with a Mixed Use/Commercial FLUM within the Safe Harbor Community Center Overlay District shall have this maximum FAR of 0.45.</p> <p>(c) Notwithstanding Section 138-147(a), enclosed and partially enclosed boat barns shall not count towards Floor Area Ratio within the Safe Harbor Community Center Overlay District.</p> <p>(d) In order to preserve and promote recreational and commercial working waterfront uses, as defined by 342.07, F.S., pursuant to Policy 101.5.6., the following criteria shall apply to all lands designated with the Maritime Industries (MI) land use (zoning) district within this land use category:</p> <p>a. When a mixture of uses is proposed for parcels designated as MI land use (zoning) district, working waterfront and water dependent uses, such as marina, fish house/market, boat repair, boat building, boat storage, or other similar uses but excluding transient uses, shall be preserved by maintaining a minimum of 35% of the upland area of the property for those uses.</p> <p>To incentivize additional preservation of recreational and commercial working waterfront uses, the following shall be available:</p> <p>i. <u>For the preservation of 36—50% of the upland area of property for working waterfront and water dependent uses, up to 20,000 square feet of nonresidential floor area from the NROGO bank shall be provided to the property; and</u></p> <p>ii. <u>For the preservation of 50% or more of the upland area of property for working waterfront and water dependent uses, the residential density, including Hotel/Motel density, on the property may be developed pursuant to the maximum net density standard without the use of TDRs.</u></p> <p>iii. <u>If parcels do not preserve 50% or more of the upland area of the property for working waterfront and water dependent uses, TDRs can be utilized to attain the density between the allocated density standard up to the maximum net density standard.</u></p> <p>iv. <u>Deed restricted affordable dwelling units may be built up to the maximum net density without the use of TDRs.</u></p>		

(9) *Parking requirements.*

1. General Requirements.

- a. Every use shall be provided with off-street parking in accordance with Section 114-67.
 - b. Up to 20 percent of the required parking spaces for nonresidential uses may be replaced with an equivalent number of smaller parking spaces designed to accommodate motorcycles or scooters and other similar modes of transportation.
2. *Required number of off-street parking spaces.* Notwithstanding Section 114-67(e), the following number of parking spaces shall be provided for each use:

Specific Use Category	Minimum Required Number of Parking Spaces Per Indicated Unit of Measure
Single-family dwelling units, including mobile homes on individual lots or parcels	2.0 spaces per dwelling unit or mobile home
Multifamily residential developments	1.5 spaces per dwelling unit
Commercial retail except as otherwise specified in this table	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building and 1.5 spaces per 1,000 sq. ft. of area devoted to outdoor retail sales
Eating and drinking establishments, such as restaurants and bars	For areas devoted to food/beverage service, 1.0 space per 3 seats or 3.0 spaces per 1,000 sq. ft. of nonresidential floor area, whichever total amount is higher. For other areas, 3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building separate from the seating area and devoted to activities other than food/beverage service (including, but not limited to, kitchen, office, retail sales not related to food or beverage and storage)
Commercial recreation (indoor), excluding theaters, conference centers and activity centers	5.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Commercial recreation (outdoor)	5.0 spaces per 1,000 sq. ft. of the parcel that is directly devoted to the outdoor recreational activity, excluding areas used for parking and driveways, required yards, and required landscaping and buffer areas
Theaters, conference centers, or activity centers	1.0 space per 3.0 actual seats or based on seating capacity
Offices	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building

Hotels	1.0 space per each 1-bedroom transient dwelling unit and 1.0 space plus 0.5 space for each additional bedroom per each 2 or more-bedroom transient dwelling unit
Industrial uses; excluding mini warehouses/self-storage centers; repair or servicing of vehicles; and warehousing	2.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building; and 1.0 space per 1,000 sq. ft. of the parcel that is devoted to outdoor industrial use
Live-aboard	1.0 space per berth
Marinas and commercial fishing facilities	1.0 space per 2 berths plus 1.0 space per 4 dry storage racks
Charter/guide boats, six or fewer passenger capacity	1.0 space per berth
Party and charter/guide boats, more than six passengers capacity	0.3 space per passenger capacity of vessel
Boat ramps	6.0 spaces per ramp; all spaces shall be a minimum of 14 feet by 55 feet, to accommodate trailers and oversized vehicles

3. *Off-site parking facilities.* Notwithstanding Section 114-67(h), the following requirements shall apply to off-site parking facilities for nonresidential uses.

- a. Off-site parking facilities shall be permitted and located within the Safe Harbor Community Center Overlay District.
- b. A parking agreement shall be required in accordance with Section 114-68.

(10) *Setbacks.*

1. *Front yard setback.* The front yard setback for any structure on a parcel within the Safe Harbor Community Center Overlay District shall be a minimum of 10 feet.
 - a. *Accessory driveways and walkways.* Accessory structures, limited to driveways and walkways, may be permitted within a required front yard setback provided they do not exceed six (6) inches in height as measured from grade. In no event shall the total combined area of all accessory structures occupy more than 60 percent of the out required front yard setback area.
 - b. *Outdoor Lighting.* All outdoor lighting shall comply with Chapter 114, Article VI Outdoor Lighting. Notwithstanding, streetlights and landscape lighting may be located in the front setback.
 - c. *Signs and landscaping.* Signs as permitted in Chapter 142 and landscaping may be permitted in a required front yard setback.
 - d. *Fences.* Notwithstanding the provisions of Secs. 114-13(a)(4) and 114(a)(4)c., fences of up to six (6) feet may be permitted, provided they are not located within clear sight triangles as defined in section 114-201 and/or

according to FDOT and national AASHTO standards, whichever is more restrictive.

In addition, parcels of land that are developed with single family dwellings may incorporate entry features of greater than six (6) feet within fences, provided all of the following design criteria are met:

- i. The entry feature is defined as a continuous fence or gate, or combination thereof, located contiguous to and on both sides of the main access (driveway) to the property which is designed and intended to control and/or demarcate the access to the property. An "entry feature" includes all walls, buttresses, guy wires, integral signs and decorative features attached thereto up to a maximum width of 12 feet, or 15 percent of the lot width whichever is greater, a maximum height of ten (10) feet, and four (4) feet in depth or six (6) percent of the lot depth whichever is greater as measured from the front property line; and
- ii. The entry feature shall not be located in any side yard setback required pursuant to Section 131-1; and
- iii. The entry 1 feature shall be compatible with the existing development in the immediate vicinity, shall be in harmony with the general appearance and character of the community, and shall not be otherwise detrimental to the public welfare; and
- iv. The entry feature shall be designed and arranged on the site in a manner that minimizes aural and visual impact on the adjacent structures while affording the applicant a reasonable use of the land; and
- v. The entry feature shall require a building permit for its construction and in addition to the normal building permit application requirements, the application shall include a scaled site plan and elevations for the entry feature that shows the height, width, and length of each element of the entry feature applied for, including any decorative or non-functional elements; and identification of the materials composing each element of the structure (e.g., wire, stone, chain-link, wood, etc.).

2. *Shoreline Setback.* Water-dependent accessory uses within the Safe Harbor Community Center Overlay District lawfully established as of the effective date of this section may be redeveloped in their existing footprint in the event of involuntary substantial damage or destruction.

Water-dependent accessory structures within the Safe Harbor Community Center Overlay District shall be setback the greater of ten (10) feet or the applicable setback prescribed by Florida Department of Environmental Protection or Army Corps of Engineers regulations, whichever regulation is more restrictive, provided such uses do not involve discharge into Safe Harbor or adjacent surface waters.

Such additional uses are limited to waterfront dining areas, pedestrian walkways, public monuments or statues, informational kiosks, fuel or septic facilities, and water-dependent marina uses.

3. *Rear and side yard setbacks.* Any rear and side yard setbacks within the within the Safe Harbor Community Center Overlay District shall be reduced to a minimum of 5 feet.
- (11) *Outdoor Lighting.* All outdoor lighting shall comply with Chapter 114, Article IV *Outdoor Lighting*. Notwithstanding, streetlights and landscape lighting may be located in the front yard setback consistent with subsection g(2)a.
- (12) *Signage.* Due to the distance from US-1, for purposes of signage in the Safe Harbor Community Center Overlay District, the Planning Director shall approve multiple signs, per entrance way, on a particular parcel under this provision upon.
- (13) *CBRS Restrictions.* Notwithstanding the provisions of Chapter 138 or any other provision to the contrary, parcels within the Safe Harbor Community Center Overlay District which are designated within Coastal Barrier Resources System Unit FL 57 shall not be prohibited from serving as receiver sites for transient, market rate, and affordable dwelling units, provided the applicable site meets all other criteria established in Comprehensive Policy 101.6.8 for a receiver site and so long as no structure is developed in any portion of the parcel designated as CBRS.
- (14) *Drones.* The use of unmanned aerial vehicles and/or drones within the Safe Harbor Community Center Overlay District are prohibited.
- (15) *District Boundary Bufferyards.* No district boundary bufferyard shall be required for parcels within the Safe Harbor Community Center Overlay District. A district boundary bufferyard shall be required if a parcel within the SHCC Overlay District abuts a parcel of a different zoning district that is not within the SHCC Overlay District.

Reason for Proposed Text Amendment

The Monroe County Year 2030 Comprehensive Plan provides for the Livable CommuniKeys Master Plan which in turn provides for the Master Plan for the Future Development of Stock Island & Key Haven, which provides for the establishment of the Safe Harbor Community Center Overlay District which is the basis of this Amendment.

Text Amendment Request

The Amendment seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the SHCC for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC.

Ms. Emily Schemper, Senior Director

RE: Fifth Amendment to Proposed Text Amendment (File No.: 2018-169)

September 28, 2021

Page 14 of 32

Policy 101.5.6

Although Section 130-140(f)(1)(b)(4) of the Amendment above permits commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area as a minor conditional use, this does not contradict Policy 101.5.6 of the Monroe County Comprehensive Plan, which provides that parcels within the Maritime Industries zoning district shall be limited to uses of less than 5,000 square feet of floor area. The specified permitted minor conditional use can only occur by consolidation of parcels as set forth above in Section 130-140(c) of the Amendment.

Parking

The parking calculations provided are based on: (1) historical parking utilization data in the SHCC; (2) the requirements of the City of Key West Land Development Regulations which contain similar parking demands for liveaboards and wet slips in urban areas; (3) as well as 15 years of data evidencing that dry slips are utilized half the time wet slips are utilized and generate approximately half the parking demand. Because of Safe Harbor's proximity to Key West, alternative modes of transportation, including bicycles and scooters, are utilized for transportation. A parking study has been submitted along with this amendment supporting the adjustments to parking contained in the Amendment.

Setback

The SHCC Overlay District will reduce the required front setback for each parcel within the SHCC Overlay District to 10 feet which will allow for a more accessible and inviting atmosphere for the buildings in the SHCC Overlay District. Further, existing water dependent principal and accessory structures will be permitted to be built back in the event of involuntary destruction due a natural disaster, fire or other issue and new water dependent uses will be situated to best take advantage of Safe Harbor. Safe Harbor Marina, Keys Fresh Seafood, and 3D boatyard all have principal water dependent structures that if destroyed would not be capable of being rebuilt. This code provision protects these property owners' long-term investments.

Signage

There is a need for a change in the regulations related to SHCC Overlay District. Additionally, this permits ease of wayfinding as the SHCC Overlay District is further from US1. Further, this is in compliance with the action items adopted in the LCP.

Military Installation Area of Impact

The Safe Harbor Community Center Overlay District is located in a noise zone of less than 65 DNL (Day-Night Average Sound level) noise contour pursuant to the 2013 Aircraft Noise Study for Naval Air Station Key West, and the Safe Harbor Community Center Overlay District is compatible with the Military Installation Area of Impact (MIAI).

Density

A. Underlying intent behind Incentives in 101.5.6

During the April 23, 2014, Board of County Commissioners (BOCC) Special meeting to review the proposed updates to the text of the Monroe County Comprehensive Plan (Comp. Plan), the requested additional incentives be added to the Comp. Plan, which resulted in Sections (i) and (ii) (the “Incentives”) being added under Policy 101.5.6. It is clear from the BOCC Special Meeting held on April 23, 2014, that the intent behind the commissioner’s wanting to add the Incentives is to protect and preserve working waterfront within MI zoning districts by providing benefits to property owners willing to preserve large percentages of upland for working waterfront:

April 23, 2014: BOCC Special Meeting for Comp. Plan Text:

Policy 101.45.56 <PC recommended increasing percentages to be preserved>

The principal purpose of the Mixed Use/Commercial (MC) future land use category is to provide for the establishment of mixed use commercial land use (zoning) districts where various types of commercial retail and office may be permitted at intensities which are consistent with the community character and the natural environment – Employee housing and commercial apartments are also permitted. In addition, Mixed Use/Commercial land use districts are to establish and conserve areas of mixed uses, which may include maritime industry, light industrial uses, commercial fishing, transient and permanent residential, institutional, public, and commercial retail uses.

This future land use category is also intended to allow for the establishment of mixed use development patterns, where appropriate – Various types of residential and non-residential uses may be permitted; however, heavy industrial uses and similarly incompatible uses shall be prohibited. -The County shall continue to take

Future Land Use Element

27

Keith and Schnars, P.A.
Comprehensive Plan: Mar 2014

Monroe County Comprehensive Plan Update

a proactive role in encouraging the ~~maintenance~~preservation and enhancement of community character and recreational and commercial working waterfronts.

In order to protect environmentally sensitive lands, the following development controls shall apply to all hammocks, pinelands, and disturbed wetlands within this land use category:

1. only low intensity commercial uses shall be allowed,
2. a maximum floor area ratio of 0.10 shall apply to nonresidential development, and
3. maximum net residential density shall be zero.

In order to preserve and promote recreational and commercial working waterfront uses, as defined by 342.07, F.S., the following criteria shall apply to all lands designated with the Maritime Industries (MI) land use (zoning) district within this land use category:

1. When a mixture of uses is proposed for parcels designated as MI land use (zoning) district, working waterfront and water dependent uses, such as marina, fish house/market, boat repair, boat building, boat storage, or other similar uses but excluding transient uses, shall be preserved by maintaining a minimum of ~~345%~~ of the upland area of the property, ~~adjacent to the shoreline~~, for those uses.
2. Parcels within the MI zoning district that have existing wet slips shall preserve at least ~~250%~~ of the wet slips for vessels involved with recreational and commercial working waterfront uses, ~~with at least 10% reserved for commercial working waterfront uses~~, excluding live-aboard vessels solely used as a residence and not for navigation.
3. Parcels within the MI zoning district creating new wet slips shall preserve at least ~~420%~~ of the wet slips for vessels involved with recreational and commercial working waterfront uses, ~~with at least 5% reserved for commercial working waterfront uses~~, excluding live-aboard vessels solely used as a residence and not for navigation.
4. The preservation of dockage for recreational and commercial working waterfront uses shall be documented on the final development plan and shall be a written condition of any permit approval.
5. For permanent residential development, parcels within the MI zoning district shall be limited to commercial apartments or employee housing. Commercial apartment means an attached or detached residential dwelling unit located on the same parcel of land as a nonresidential use that is intended to serve as permanent housing for the owner or employees of that

6. Policy 101.5.6 – no to PC recommendations on items #1, 2, and 3 but keep PC recommendation on #6.

The following individual addressed the Board: Julie Dick, representing Last Stand and Florida Keys Environmental Fund.

A motion was made by Commissioner Kolhage and seconded by Commissioner Neugent to approve Staff's recommendation as it was before the Planning Commission made the change. Motion carried unanimously.

7. Policy 101.5.6 – develop potential incentives for protecting/preserving of working waterfronts.

A Motion was made by Commissioner Carruthers and seconded by Commissioner Kolhage to have Staff come back with additional policy with further protection to waterfront. Motion carried unanimously.

8. Policy 101.5.25 – density & intensity table

No - to PC recommendation on (g) and Yes – to (f)

9. Policy 101.5.26 – delete “nonresidential intensity” through policy & clarify that mitigation required if map amendment approved & see if we can adjust policy so there is no net increase in density (discussion that this was difficult to do - staff to look at this and see if it can be fixed somehow)

Meeting discussion for Policy 101.5.6 (Video: (1:39:56-1:48:32)):

- The Planning Commission recommended increasing the required percentages for preservation

Commissioner comments:

- Carruthers- Do we have more incentives for working waterfront uses, to increase the property dedicated to commercial fishing?
- Kolhage- Remove the edits to increase the percentages (not move forward with PC recommendation) and create more ideas for incentives.
- CH- what about exempting all development from NROGO?
- MS- an NROGO exemption is already included (industrial in MI)
- Carruthers- come up with another policy to further incentive protecting more working waterfront within MI. Kolhage seconds. (1:45:25)

It is clear that the inclusion of the term “Residential Density” in the Incentives is not used to limit the density to permanent dwelling units, but is rather used as an all-encompassing term that includes transient density for the following reasons:

B. The Comprehensive Plan Governs the Terms used within its Policies and Objectives:

When analyzing the intent behind the addition of the above-mentioned language to Policy 101.5.6 of the Comp. Plan during the Comp. Plan update, the definitions, tables, and content of the Comp. Plan itself must be used, as it is the document that governs all objectives and policies contained therein. The Comp. Plan does not specifically provide a definition for the phrase “Residential Density,” however, it is clearly intended to include both permanent residential density and transient density, a fact that is solidified by the construction and use of the Future Land Use Densities and Intensities under Policy 101.5.25:

Future Land Use Category and Corresponding Zoning	Future Land Use Densities and Intensities			Minimum Open Space Ratio ^(c)
	Residential ⁽¹⁾		Nonresidential	
	Allocated Density ^(a) (per upland acre)	Maximum Net Density ^{(a)(b)} (per buildable acre)	Maximum Intensity (floor area ratio)	
Agriculture/Aquaculture (A) ^(d) (no directly corresponding zoning)	0 du 0 rooms/spaces	N/A N/A	0.25	Per underlying zoning
Airport (AD) (AD zoning)	0 du 0 rooms/spaces	N/A N/A	0.10	0.20
Commercial (COMM) (C1 and C2 zoning)	0 du 0 rooms/spaces	N/A N/A	0.15—0.50	0.20
Conservation (C) (CD zoning)	0 du 0 rooms/spaces	N/A N/A	0.05	0.90
Education (E) ^(d) (no directly corresponding zoning)	0 du 0 rooms/spaces	N/A N/A	0.30	Per underlying zoning
Industrial (I) (I and MI zoning)	1 du 0 rooms/spaces	2 du N/A	0.25—0.60	0.20
Institutional (INS) ^(d) (no directly corresponding zoning)	0 du 15 rooms/spaces	N/A 24 rooms/spaces	0.30	Per underlying zoning
Mainland Native (MN) (MN zoning)	0.01 du 2 spaces ^(e)	N/A N/A	0.03	0.95—0.99
Military (M) (MF zoning)	6 du 10 rooms/spaces	12 du 20 rooms/spaces	0.30—0.50	0.20

The table clearly identifies “Residential” and “Non-Residential” Density. Additionally, the table provides the relevant allocated and maximum net density per buildable acre for each zoning district under “Residential.” Conversely to the Land Development Code, the table specifically provides the densities per buildable acre for both permanent density and transient density under the same “Residential” heading. Had the intent been to segregate transient density, a separate column or table would have been provided. Therefore, it is abundantly clear from the inclusion of transient density under this heading “Residential,” in a table provided to identify Future Land Use Densities and Intensities that the Comp. Plan utilizes the term Residential Density as an all-encompassing term rather than a specific term. County is arguing that because the Monroe County Land Development Code’s (LDC) separates transient and residential density into different sections of the code that transient density is implicitly separate from residential density. However, that argument actually strengthens the idea that the Comp. Plan incorporates the two terms under Residential Density. If, as the County States, it is clear from the construction of the LDC and its use of separate sections and tables for density and intensity, and that the LDC specifically separates transient density and residential density for governance under that documents, that the terms are distinct; then it logically follows that because the Comp. Plan’s construction is one in which a single table is provided for both forms of density, and that transient density is identified under a heading within that table that is specifically identified as “Residential,” that the intent under the Comp. Plan was to use the term “Residential Density” to simplify the identification of BOTH permanent and transient density under a single term.

C. The Burden Imposed by the Incentives Clearly Outweighs the Benefit Bestowed to the Property Owner if the Incentives do not include Transient Density.

Should the term “Residential Density” not include transient density, the Incentives do not provide nearly enough benefit compared to the burden being requested. MI zoning districts are not permitted to develop permanent dwelling units unless they are designated as employee housing or are commercial apartments.¹ Commercial apartments are defined as attached or detached residential dwelling unit located on the same parcel of land as a nonresidential use that is intended to serve as permanent housing for the owner or employees of that nonresidential use. The term does not include a tourist housing use or vacation rental use. Employee housing is not included in density calculations. Therefore, if transient density is not included in the Incentives, the only benefit provided in MI zones is max net density for commercial apartments, which is an exceptionally limited dwelling unit type. Additionally, the incentive is seeking 50% or more upland be preserved on the property for that exceptionally limited benefit. It is clear that the intent behind adding the incentive to the Comp. Plan was to preserve working waterfront within the MI zoning districts, however, unless the Incentive includes max net density for transient uses as well as commercial apartments (permanent dwelling units in MI) there is simply not an incentive

¹ See LDC Sec. 130-85. Maritime Industries District (MI).

for property owners to preserve such a large portion of their upland. It is unlikely that any property owner would be willing to preserve 50% or more usable upland to gain max net density for only commercial apartments. It is therefore exceedingly difficult to believe that the intent behind the addition of these Incentives only contemplated max net density for commercial apartments as the benefit, because if that were the case, those behind the addition must have known that very few, if any, property owners would have considered the preservation of their precious upland for such a small and limited benefit.

D. County has accepted that the Incentives have included Transient Density in the Past.

Previously applications have been approved and progressed through permitting by utilizing the Incentives max net density for transient uses. In or around 2014, a Major Conditional Use permit (“MCU”) (File No. 2014-027) was approved by Planning Commission Resolution No. P43-14 (“Resolution”). The Major conditional use permitted the development of a 100-room transient hotel. The County is asserting that they required TDRs be utilized for the development of such hotel. However, the applicant preserved 50% or more upland for working waterfront and water-based uses on the property, and subsequently applied for the MCU using the max net density provided under the Incentives. Subsequently, the project was permitted and developed under the same max net density standards without TDRs.

E. If the Incentives Do Not Include Transient Density, the Incentives Will Fail to Accomplish their Underlying Intent.

As discussed above, the underlying intent behind the addition of the Incentives was to preserve working waterfront within the MI zoning districts. Furthermore, the County has stated in their arguments that that the incentives specifically precluded transient density to prevent the working waterfront from being utilized as hotels/condos. This is a mute argument for two reasons: 1) MI zoning districts can develop Hotels providing 50 or more rooms with a major conditional use approval,²

(c) The following uses are permitted as major conditional uses in the maritime industries district, subject to the standards and procedures set forth in [chapter 110](#), article III:

(1) Hotels providing 50 or more rooms, provided that:

- a. The hotel has restaurant facilities on the premises;
- b. One or more of the following amenities are available to guests:
 1. Swimming pool; or
 2. Docking facilities; or
 3. Tennis courts; and
- c. Access to U.S. 1 is by way of:
 1. An existing curb cut;
 2. A signalized intersection; or
 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;

² See Monroe County Land Development Code Sec. 130-81(c)(1).

And 2) the hotels can be developed on all, or most of the upland with the use of TDRs, nullifying the purpose and intent of the Incentives. The Incentives were specifically added to the Comp. Plan in an attempt to persuade property owners to preserve large amounts of upland in exchange for a benefit. To persuade a property owner to preserve half of their upland for working waterfront in exchange for max net density for only commercial apartments is counterintuitive for the property owner, because under the code, these properties can develop hotels on most, if not all, of their upland (according to LDC compliance with open space etc...), if they have the required density, or if they utilize TDRs to get to max net density. However, under the county's interpretation of the Incentives, if the property owner preserves 50% or more of their upland, they receive max net density for commercial apartments, but are required to utilize TDRs to achieve max net transient density, and can only develop that hotel on 50% or less upland (the space not being preserved). Under this reading, the Incentives actually become a burden to the property owner, because they not only lose the ability to build on 50% or more upland, they also have to achieve max net density by use of TDRs for transient uses. However, if the Incentives include transient density under the benefit, they would provide max net density for transient uses in MI zoning districts, and would also require the preservation of the 50% or more upland for working waterfront-which is the primary and underlying intent behind the addition of the incentives in the first place. Although this would allow the development of more hotels in MI zoning districts, it would also help accomplish the specific and underlying intent and goal of the Incentives- preservation of working waterfront within MI zoning districts, while precluding the development of Hotels/motels under Policy 101.5.6 would remove the incentive for property owners to preserve working waterfront in an attempt to utilize the maximum amount of density possible under the code (which would include the working waterfront), which is directly contradictory to the primary purpose of the incentive included in 101.5.6.

F. If the Incentive Do Not Include Transient Density, Properties with Existing Preserved Land for Max Net Transient Density Can Retroactively Utilize the Preserved Land for Development.

If a Property has configured its development based upon the preservation of 50% or more upland in order to receive the max net Residential Density (inclusive of transient density), and the County does not provide the property owner with the complete incentive, there is nothing preventing the property owner from abandoning their intent to preserve the 50% or more upland in order to retroactively utilize the preserved land for future development because precluding the development of Hotels/motels under Policy 101.5.6 would remove the incentive for property owners to preserve working waterfront in an attempt to utilize the maximum amount of density and upland permissible under the code (which would include the working waterfront), which is directly contradictory to the primary purpose of the incentive included in 101.5.6.

Boat Barns/Racks

This Amendment will allow development of boat racks which are covered and enclosed (provided the same are not associated with retail sales of boats), rather than just covered, unenclosed boat racks, without requiring NROGO square footage.

The Amendment eliminates an artificial distinction with no significance to the NROGO scheme. There is no functional or operational difference between covered, unenclosed, or enclosed on three sides boat racks and covered, enclosed boat racks. However, under the current Code, a developer must obtain NROGO allocations and/or exemptions to construct an enclosed boat storage building but can build a non-enclosed (three-sided) boat storage building without the necessity of obtaining NROGO. This incentivizes development and continued use of unenclosed boat storage and discourages development and use of enclosed boat storage which is more secure from a security perspective and less susceptible to damage in a wind event such as a hurricane.

Simple physics dictates that a one, two, or three-sided building has an increased risk of sustaining damage in a wind event as opposed to a four-sided, enclosed building. Because of the lack of enclosure, wind blowing into the unenclosed structure can create a “sail” effect, stressing the structural components of the building. An enclosed building presents no such opportunity. From a practical perspective, designs of enclosed boat storage buildings which are rated for hurricane-force winds are readily available, whereas three-and-fewer sided buildings are not typically designed to withstand high-intensity winds.

There is no public policy justification for the current disparate treatment of enclosed and unenclosed boat racks. Both enclosed and unenclosed boat racks are “constructed, installed or portable, the use of which requires a location on a parcel of land,” and as such meet the Code definition of “structure.”

Figure 1, below, depicts an elevation and an aerial of an enclosed, four-sided structure intended for boat dry rack storage. Construction of this structure requires NROGO:

Figure 1:

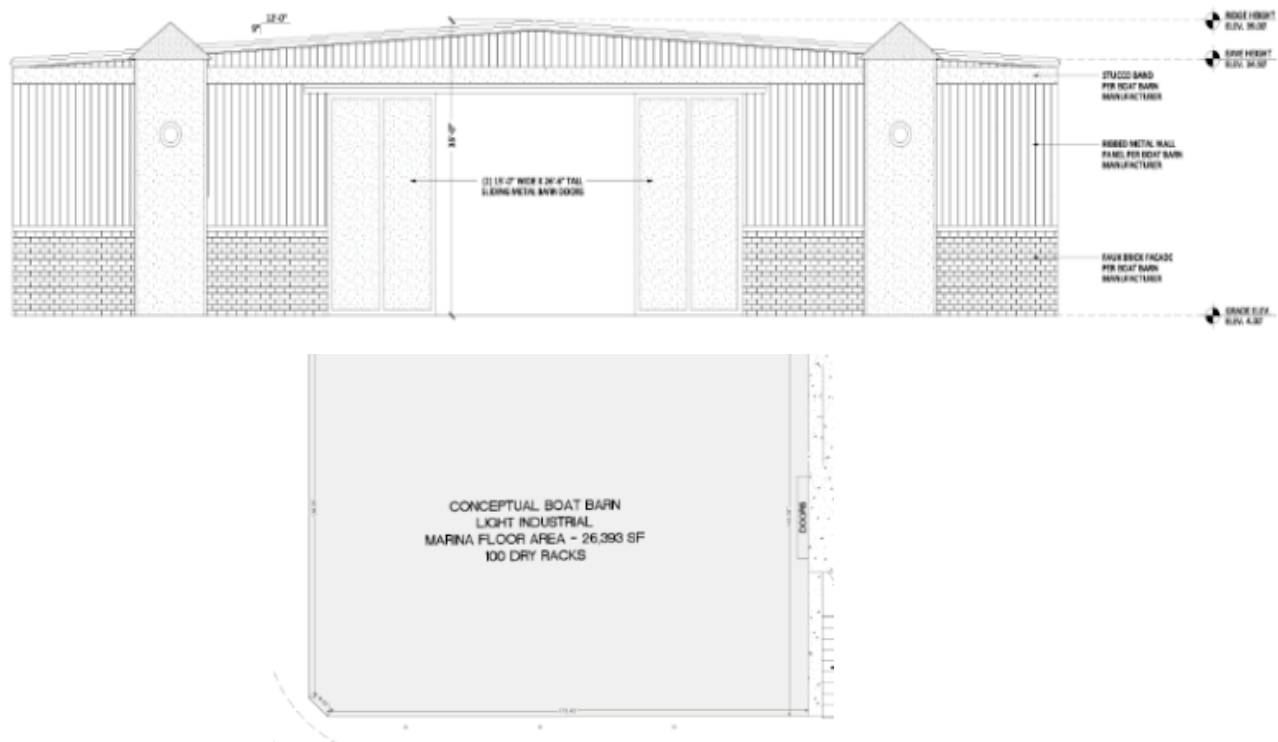
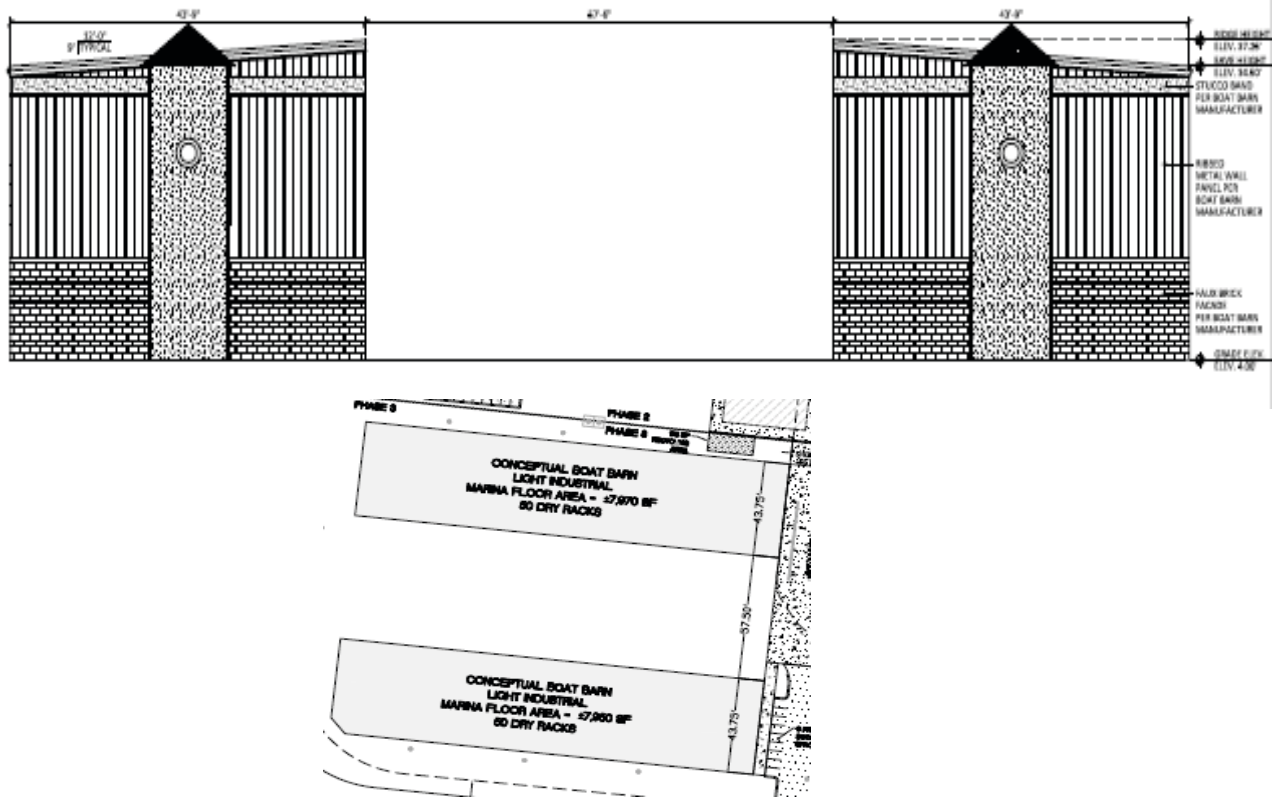


Figure 2, below, depicts an elevation and an aerial of the same structure “cut” in half, creating two three-sided unenclosed structures. Construction of these structures for boat storage use unrelated to retail sales does not require NROGO:

Figure 2:



The above Figures illustrate the absurdity of the current Code and the practical need for the Amendment. The Amendment will not change the function of the Code in any way but will allow developers and port operators to meet Florida Building Code requirements more easily and economically for boat rack structures, while decreasing the risk to boats stored inside as addressed herein.

Consistency with the Monroe County Year 2030 Comprehensive Plan, the Stock Island-Key Haven Liveable Communikeys Plan, the Florida Statutes, and Principles for Guiding Development

- A. The Proposed Amendment implements and is consistent with the following Goals, Objectives, and Policies of the Monroe County Year 2030 Comprehensive Plan. Specifically, the amendment furthers:**

Objective 101.4: Monroe County shall regulate nonresidential development to maintain a balance of land uses to serve the needs of the future population of Monroe County.

Policy 101.4.5 The NROGO allocation system shall not apply to the following nonresidential developments:

5. Industrial uses in the Maritime Industries (MI) and the Industrial (I) land use (zoning) districts.
12. Recreational and commercial working waterfront uses, as defined by §342.07, F.S., excluding transient uses. These exemptions shall not be available on lands designated as Tier I or, if clearing is proposed, designated as Tier III-A (SPA).

GOAL 217: The coastal area of Monroe County shall be managed to promote public access to the marine and coastal waters, to balance the protection of recreational and commercial working waterfront and commercial fishing uses and the preservation and protection of coastal and natural resources and the community character. [§163.3178(2)(g), F.S.]

Policy 217.1.1: The strategy to preserve and protect commercial fishing and recreational and commercial working waterfront uses shall include the following:

1. Exemptions from the requirements of the Permit Allocation System for new nonresidential development, pursuant to Policy 101.4.5;

GOAL 502: All existing and future residents and visitors of Monroe County shall be served with ports³ in a manner that maximizes safety, convenience, economic benefit, environmental compatibility, and consistency with other elements of the comprehensive plan.

Objective 502.1: Because of the Florida Keys' unique nature as an archipelago, Monroe County shall promote the preservation and enhancement of the existing ports and port related activities.

Policy 101.5.6: The principal purpose of the Mixed Use/Commercial (MC) future land use category is to provide for the establishment of mixed-use commercial land use (zoning) districts where various types of commercial retail and office may be permitted at intensities which are consistent with the community character and the natural environment. Employee housing and commercial apartments are also permitted. In addition, Mixed Use/Commercial land use districts are to establish and conserve areas of mixed uses, which may include maritime industry, light industrial uses, commercial fishing, transient and permanent residential, institutional, public, and commercial retail uses.

This future land use category is also intended to allow for the establishment of mixed-use development patterns, where appropriate. Various types of residential and nonresidential uses may be permitted; however, heavy industrial uses and similarly incompatible uses shall be prohibited. The County shall continue to take a proactive role in encouraging the preservation and enhancement of community character and recreational and commercial working waterfronts.

Policy 101.5.22: The principal purpose of the Community Center (CC) overlay is to identify a defined geographic developmental focus area according to each of the adopted

³ "Port" is defined in the Comprehensive Plan as "a place alongside navigable water with facilities for the loading and unloading of vessels and cargo." Private marinas meet this definition.

Livable CommuniKeys Community Master Plans. The intent of this overlay is to implement the action items identified in the Livable CommuniKeys Community Master Plans, pursuant to Policy 101.19.2. Within three years of the adoption of the 2030 Comprehensive Plan, Monroe County shall adopt the Community Center overlays as identified by the Livable CommuniKeys Community Master Plans included in Policy 101.19.2 on the Future Land Use Map. Maximum permitted densities and intensities shall be in accordance with the underlying land use categories.

GOAL 601: Monroe County shall adopt programs and policies to facilitate access by residents to adequate and affordable housing that is safe, decent, and structurally sound, and that meets the needs of the population based on type, tenure characteristics, unit size and individual preferences.

B. The Proposed Amendment implements and is consistent with the following Goals, Strategies and Action Items of the Livable CommuniKeys Program for Stock Island and Key Haven. Specifically, the amendment furthers:

Action Item 1.1.2: Amend the parking requirements in the overlay district by offering a parking credit for on-street parking spaces located directly in front of the development being served.

Action Item 1.1.3: Amend the floor area ratios in the overlay district for commercial retail and industrial uses.

Action Item 1.1.5: Create an overlay district to resolve issues with non-conforming structures and uses in the MU and MI land use districts.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density.

Strategy 1.2 Create a “downtown” district.

Action Item 1.2.1: Identify Safe Harbor as a focal point of the “downtown” district. As part of this designation, analyze the appropriate boundaries for the “downtown” district and propose revisions to the Land Development Regulations.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density

Goal One: Provide space for a working waterfront and its supporting industries.

Goal Two: Preserve commercial fishing.

Goal Three: Enhance the area’s identity as a water-oriented, commercial fishing community.

Goal Four: Revitalize the port area while improving its physical setting and appearance.

Goal Five: Promote opportunities for the diversification of the local water-dependent economy.

Goal Six: Provide and improve waterfront access.

Goal Seven: Create an efficient, visually attractive network of intra-island corridors.

C. The Proposed Amendment is consistent with Florida Statutes

There are no provisions of the Florida Statutes inconsistent with the proposed Amendment.

D. The amendment is consistent with the Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7), Florida Statutes. The Proposed Amendment specifically furthers the following Principles (Bolded):

For the purposes of reviewing the consistency of the adopted plan, or any amendments to that plan, with the principles for guiding development, and any amendments to the principles, the principles shall be construed as a whole, and specific provisions may not be construed or applied in isolation from the other provisions.

1. Strengthening local government capabilities for managing land use and development so that local government is able to achieve these objectives without continuing the area of critical state concern designation.
2. Protecting shoreline and marine resources, including mangroves, coral reef formations, seagrass beds, wetlands, fish and wildlife, and their habitat.
3. Protecting upland resources, tropical biological communities, freshwater wetlands, native tropical vegetation (for example, hardwood hammocks and pinelands), dune ridges and beaches, wildlife, and their habitat.
4. **Ensuring the maximum well-being of the Florida Keys and its citizens through sound economic development.**
5. Limiting the adverse impacts of development on the quality of water throughout the Florida Keys.
6. Enhancing natural scenic resources, promoting the aesthetic benefits of the natural environment, and ensuring that development is compatible with the unique historic character of the Florida Keys.
7. Protecting the historical heritage of the Florida Keys.
8. Protecting the value, efficiency, cost-effectiveness, and amortized life of existing and proposed major public investments, including:

- a. The Florida Keys Aqueduct and water supply facilities;
 - b. Sewage collection, treatment, and disposal facilities;
 - c. Solid waste treatment, collection, and disposal facilities;
 - d. Key West Naval Air Station and other military facilities;
 - e. Transportation facilities;
 - f. Federal parks, wildlife refuges, and marine sanctuaries;
 - g. State parks, recreation facilities, aquatic preserves, and other publicly owned properties;
 - h. City electric service and the Florida Keys Electric Co-op; and
 - i. Other utilities, as appropriate.
9. Protecting and improving water quality by providing for the construction, operation, maintenance, and replacement of stormwater management facilities; central sewage collection; treatment and disposal facilities; and the installation and proper operation and maintenance of onsite sewage treatment and disposal systems.
 10. Ensuring the improvement of nearshore water quality by requiring the construction and operation of wastewater management facilities that meet the requirements of ss. 381.0065(4)(l) and 403.086(10), as applicable, and by directing growth to areas served by central wastewater treatment facilities through permit allocation systems.
 11. Limiting the adverse impacts of public investments on the environmental resources of the Florida Keys.
 12. Making available adequate affordable housing for all sectors of the population of the Florida Keys.
 - 13. Providing adequate alternatives for the protection of public safety and welfare in the event of a natural or manmade disaster and for a post disaster reconstruction plan.**
 14. Protecting the public health, safety, and welfare of the citizens of the Florida Keys and maintaining the Florida Keys as a unique Florida resource.

Pursuant to Section 380.0552(7) Florida Statutes, the proposed amendment is consistent with the Principles for Guiding Development as a whole and is not inconsistent with any Principle.

Changed Projections, Assumptions and New Issues

The Board of County Commissioners may consider an amendment if the change is based on one or more factors, including changed projections (e.g., regarding public service needs) from those on which the text was based, changed assumptions (e.g., regarding demographic trends), data errors, new issues, or recognition of a need for additional detail or comprehensiveness.

The proposed Amendment is based on a need for additional detail or comprehensiveness, and the SHCC Overlay District provides a framework consistent with the Comprehensive Plan and as set forth in the Livable CommuniKeys Program for Stock Island and Key Haven.

Safe Harbor and Stock Island Marina Village

The construction of The Perry Hotel and Stock Island Marina Village have brought more tourists, visitors, and jobs to the area comprising the SHCC Overlay District. “A developing market has emerged due to Stock Island’s ability to provide world-class dockage amenities. Stock Island’s many attractive features include great restaurants, entertainment, art, and architecture, as well as beautiful golf courses, and the best year-round fishing in the U.S. There are many marinas surrounding Key West, but Stock Island Marina Village leads the industry in technology, infrastructure, and hospitality. The marina has more deepwater capacity than any other marina in the Keys, and is safely nestled within a safe harbor, providing shelter from excessive wind and seas, but maintains easy access to the open Atlantic. ... The marina — part of Stock Island’s Historic Seaport — opened its doors in the 1940s but has undergone complete redevelopment over the past four years, including the newly installed Bellingham concrete floating docks, new fuel system with 60,000 gallon capacity, 100-Room boutique style hotel, three on-site restaurants, and even more to come!” (<https://southernboating.com/destinations/us-atlantic/stock-island-marina-village-key-west-florida/>).

Ports such as the Safe Harbor Marina and Stock Island Marina Village are highly desirable destinations for boaters and fishermen from all over the world and are prime launching areas for sea travel from Florida to Cuba. “A ferry terminal for U.S.-Cuba travel, which has been a talking point for locals..., would require a marina such as Safe Harbor on Front Street or the Stock Island Marina Village on Shrimp Road, to be outfitted as an international port of entry.” *In the Shadow of Key West, Change Ahead for a Neighboring Island* (Miami Herald, August 16, 2015).

Bernstein Park

The area comprising the SHCC Overlay District is undergoing a massive amount of change, and the SHCC Overlay District is necessary to keep up with and address the changing landscape of the area. Monroe County is close to completion of the reconstruction of neighboring Bernstein Park, at a cost of approximately \$8 million, adding 2 soccer fields, a basketball court, exercise trail, a playground, and updated field lights. *This Keys Island Is Changing Right Before Our Eyes* (Miami Herald, November 27, 2016).

Boat Barn

The current Code disparately treats enclosed, four-sided boat storage racks and unenclosed, three-or-fewer sided boat storage racks with no meaningful distinction. The operational, concurrency, and environmental impacts are identical for enclosed boat racks as for three-sided, unenclosed boat racks. The text of the Amendment is consistent with the Code which encourages more sound, attractive, and practical development of boat storage racks.

Ms. Emily Schemper, Senior Director

RE: Fifth Amendment to Proposed Text Amendment (File No.: 2018-169)

September 28, 2021

Page 28 of 32

The proposed Amendment is based on changed projections as to the needs of the public. As Monroe County braces itself to deal with the increasingly evident impacts of climate change, an approach which considers and encourages best practices for storm readiness and hardening is necessary.

According to the U.S. National Climate Assessment Report, “Climate Change Impacts” (the “**NCA Report**”), produced by an advisory committee chartered under the Federal Advisory Committee Act, for the Subcommittee on Global Change Research and at the request of the U.S. Government, “[t]here has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s...[citations omitted] These include measures of intensity, frequency, and duration as well as the number of strongest (category 4 and 5) storms.” See NCA Report, P. 41. A copy of the NCA Report is attached hereto and incorporated herein as **Exhibit “B”**.

By providing for the SHCC Overlay District to accommodate enclosed boat rack structures, the Code will encourage storm-hardened and practical development of boat storage facilities. The recent wind-damage and water-damage impacts of Hurricane Irma and the projected increased intensity of Atlantic hurricanes mitigate for policies which encourage the protection of personal property (including boats) during storm events, and for investment by developers and port operators in infrastructure which provide peace of mind to visitors and tourists who may otherwise be wary to store boats in the Florida Keys for seasonal use as a result of hurricane impacts.

Furthermore, despite the best efforts of law enforcement, marine-related theft is on the rise in the Florida Keys. Pursuant to the June 21, 2017, Keynoter Article, “Marine Related Thefts on Rise Throughout the Florida Keys” (the “**Marine Theft Article**”), the theft of at least three (3) outboard engines, one (1) outboard lower unit, and three separate incidents of fishing gear theft from boats occurred over a ten-day span in June, 2017. A copy of the Marine Theft Article is attached hereto and incorporated herein as **Exhibit “C”**. One need only pick up a local newspaper any given week to find reports of the increased prevalence of marine-related theft.

The permissible development of enclosed boat racks allows developers and port operators to provide an additional option for boat storage which provides increased security to both tourist and resident boat users. It is axiomatic that an enclosed, locked boat storage structure reduces the risk of marine-related (engine and engine parts, fishing equipment, electronic equipment) theft as compared to structures where boats are visible to the naked eye. While the Marine Theft Article simply provides that “[m]ost boat, motor, and fishing and diving equipment thefts can be easily prevented with minimum effort. At the end of the day, remove your gear from the boat and lock it up[,]” motors cannot be readily removed from boats and boats themselves are vulnerable to theft when stored anywhere other than enclosed storage under lock and key. The Amendment will encourage theft-deterrence in the marine sphere and allow port operators to provide in-demand storage more economically, explicitly furthering Goal 502 of the Comprehensive Plan that “[a]ll existing and future residents and visitors of Monroe County shall be served with ports in a manner that *maximizes safety, convenience, economic benefit*, environmental compatibility and consistency with other elements of the comprehensive plan.” (*emphasis added*).

Ms. Emily Schemper, Senior Director

RE: Fifth Amendment to Proposed Text Amendment (File No.: 2018-169)

September 28, 2021

Page 29 of 32

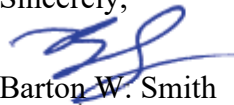
No Adverse Community Change

There will be no adverse change to unincorporated Monroe County at large if the Amendment is approved. As discussed herein, there are no increased concurrency, environmental, or practical impacts associated with implementation of the SHCC Overlay District. All such development will be required to comply with level of service, concurrency, and performance standards as set forth in the Code. Moreover, it allows for infill at or near the primary employment center of Key West and Stock Island while keeping density outside the more rural lower Florida Keys.

Conclusion

Based on the foregoing, Applicant requests consideration and adoption of the Amendment. Thank you for your consideration and assistance, and please feel free to contact me with any questions.

Sincerely,



Barton W. Smith

JG/BWS/bg

Enclosures

Cc (*Electronically*):

Ilze Aguila, Sr. Planning Commission Coordinator, (Aguila-Ilze@MonroeCounty-FL.Gov)

Ms. Emily Schemper, Senior Director

RE: Fifth Amendment to Proposed Text Amendment (File No.: 2018-169)

September 28, 2021

Page 30 of 32

Exhibit “A”

Monroe County Land Use Map Dated January 19, 1988

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Senior Director

RE: Fifth Amendment to Proposed Text Amendment (File No.: 2018-169)

September 28, 2021

Page 31 of 32

Exhibit “B”

NCA Report

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Senior Director

RE: Fifth Amendment to Proposed Text Amendment (File No.: 2018-169)

September 28, 2021

Page 32 of 32

Exhibit "C"

Marine Theft Article

PREVIOUSLY PROVIDED

SMITH/HAWKS

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August 6, 2020

VIA EMAIL and
FEDEX: 7711 9783 5725

Emily Schemper,
Senior Director
Monroe County Planning & Environmental Resources Department
2798 Overseas Highway, Suite 400
Marathon, FL 33050

RE: Fourth Amendment to Proposed Text Amendment to Provide Text for
Section 130-140 of the Monroe County Land Development Regulations
(File No. 2018-169)

Dear Emily,

Please allow this letter to serve as a fourth amendment to the Land Development Regulation Text Amendment Application ("**Original Application**") made on behalf of Longstock II, LLC, a Florida limited liability company ("**Applicant**"), received by Monroe County on August 15, 2018, first amended on December 10, 2018, and further amended on March 18, 2019 and July 15, 2020.

A copy of this fourth amendment is enclosed, please date-stamp and return the copy using the enclosed self-addressed envelope.

Additions are underlined in blue and deletions are struck through in ~~red~~. Please note that the baseline for the revisions is the amendment submitted on July 15, 2020.

The Proposed Amendment

Sec. 130-140. Safe Harbor Community Center Overlay District (SHCC).

1. *Purpose and intent.* The purpose of the Safe Harbor Community Center (SHCC) Overlay District is to implement applicable goals, objectives, and policies of the Comprehensive Plan promoting a working waterfront and public access to the marine and coastal waters and allowing for redevelopment in a non-environmentally sensitive area of the Lower Keys for

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Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 2

hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses, and preserving and protecting coastal and natural resources and the community character. The intent is to protect and maintain the character of the Safe Harbor area while allowing redevelopment/infill within the overlay district, an area that is the result of dredge and fill which has been developed with nonresidential uses.

Furthermore, the purpose of the SHCC Overlay District is to implement the goals, strategies and action items of the Stock Island – Key Haven Livable Communities Plan and the Stock Island Harbor Preservation / Redevelopment and Intra-Island Corridor Enhancement Plan to encourage redevelopment that maintains and enhances the economic diversity of the community; direct future residential and commercial activities to areas most suitable in the Planning Area; preserve and increase the number of housing units available for low and very low income families; maintain affordable housing while providing for a mix of housing options; maintain and enhance the community character of a diverse and unique mixed-use community, separate from Key West; and maintain and enhance natural resources, taking care to improve and protect water quality and beautiful and preserve open space; enhance existing park facilities and provide additional resources for active and passive land-based recreation and protect shoreline access for water based recreational activities; provide for all residential of the planning area a safe, efficient and viable transportation system for the movement of people and goods; preserve the working waterfront, revitalize the port area while improving the physical setting, accommodate a diversity of water-oriented activities and people, connect the port area to the surrounding community, provide access along the waterfront and to respect and reinforce the heritage and character of the community.

2. *Boundary.* The Safe Harbor Community Center Overlay District shall be shown as an overlay district on the Official Land Use District Map. The Safe Harbor Community Center Overlay District shall be comprised of that certain area bounded by Front Street to the east, Fourth Avenue to the north, Fifth Avenue to the north, Shrimp Road to the west, and Shrimp Road to the south but excluding that certain property owned by the Utility Board of the City of Key West and Florida Keys Aqueduct Authority bounded by Front Street to the east.

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 3



SHCC Overlay District Boundaries outlined in Orange

- ~~3. Pursuant to Monroe County Comprehensive Plan Policy 101.5.6, the limitation of 5,000 square feet of floor area for commercial retail, restaurant uses, or any combination thereof shall apply to parcels as they existed as of September 15, 1986 the date of adoption of the Land Development Regulations in 1986 and as identified in the Monroe County Land Use Map dated January 19, 1988 attached hereto as Exhibit "A".~~
- ~~4.3.~~ Notwithstanding any provision to the contrary, lawfully established non-residential structures which are non-conforming as to intensity within the Safe Harbor Community Center Overlay District as of the effective date of this section may be redeveloped up to their existing square footage in the event of ~~involuntary~~ substantial damage or destruction.
- ~~5.4.~~ In accordance with Sections 138-51(c) and 138-50(j)(3), NROGO allocations or transfers over 10,000 square feet shall be permitted into the Safe Harbor Community Center Overlay District.
- ~~6.5.~~ Within the boundaries of the Safe Harbor Community Center Overlay District, the permitted and conditional uses in subsections (1)(b) and (c) shall be enforced, in lieu of Section 130-85, Maritime Industries, and Section 130-88, Mixed Use; the maximum hotel/motel density in subsection (2) shall be enforced in lieu of Section 130-162; and the nonresidential land use

intensities in subsection (3) shall be enforced in lieu of Section 130-164, maximum nonresidential land use intensities and district open space.

(1) *Permitted uses.* ~~Safe Harbor Community Center Overlay District Permitted Uses.~~ The following uses are permitted as of right in the Safe Harbor Community Center ([SHCC](#)) Overlay District:

- a. [Accessory uses;](#)
- b. Attached and detached dwellings involving less than six units, designated as employee housing as provided for in Section 139-1;
- c. Attached wireless communications facilities, as accessory uses, pursuant to section 146-5(d);
- d. Collocations on existing antenna-supporting structures, pursuant to Section 146-5(c);
- e. Commercial apartments involving less than six dwelling units, but tourist housing uses, vacation rental use, of commercial apartments is prohibited.
- f. Commercial fishing;
- g. [Commercial recreational uses limited to:](#)
 - i. [Bowling alleys;](#)
 - ii. [Tennis and racquet ball courts;](#)
 - iii. [Miniature golf and driving ranges;](#)
 - iv. [Theaters;](#)
 - v. [Health clubs; and](#)
 - vi. [Swimming pools;](#)
- h. Commercial retail, restaurant uses, or any combination thereof, of less than 5,000 square feet of floor area;
- i. ~~Continuation and redevelopment of lawful nonconforming existing heavy industrial uses consistent with Comprehensive Plan Policy 101.8.5;~~
- j. Detached dwellings ~~within the Mixed Use Zoning District;~~
- k. Institutional residential uses, involving less than ten dwelling units or rooms;
- l. Institutional uses;
- m. Light industrial uses;
- n. Office uses of less than 5,000 square feet of floor area;
- o. Public buildings and uses;
- p. Replacement of an existing antenna-supporting structure pursuant to Section 146-5(b);
- q. Satellite earth stations, as accessory uses, pursuant to section 146-5(f);
- r. Stealth wireless communications facilities, as accessory uses, pursuant to section 146-5(e); and
- s. Wastewater nutrient reduction cluster systems that serve less than ten residences; [provided that:](#)
 1. The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;

2. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally consistent with the character of the surrounding community and shall minimize the impact of any outdoor storage, temporary or permanent; and
3. In addition to any district boundary buffers set forth in chapter 114, article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
 - i. One native canopy tree for every 25 linear feet of screening structure;
 - ii. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 - iii. The planting bed shall be installed as set forth in chapter 114, article IV; and
 - iv. A solid fence may be required upon determination by the planning director.

(2) The following uses are permitted as minor conditional uses in the Safe Harbor Community Center (SHCC) Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:

- a. Agricultural uses, limited to mariculture, provided that:
 1. The parcel proposed for development is separated from any established residential uses by at least a class C bufferyard; and
 2. All outside storage areas are screened from adjacent uses by a solid fence, wall or hedge at least six feet in height;
- b. Attached and detached dwellings involving six to 18 units, designated as employee housing as provided for in Section 139-1.
- c. Commercial apartments involving more than six dwelling units, provided that:
 1. The hours of operation of the commercial uses proposed in conjunction with the apartments are compatible with residential uses;
 2. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 3. Tourist housing uses, including vacation rental use of commercial apartments is prohibited;

- d. Commercial apartments involving six to 18 dwelling units, provided that:
 - i. The hours of operation of the commercial uses are compatible with residential uses;
 - ii. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 - iii. Tourist housing uses, including vacation rental uses, of commercial apartments are prohibited;
- e. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area, provided that access to U.S. 1 is by way of:
 - 1. An existing curb cut;
 - 2. A signalized intersection; or
 - 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- f. Commercial retail, office, restaurant uses, or any combination thereof, of high intensity, and of less than 5,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - 1. An existing curb cut;
 - 2. A signalized intersection; or
 - 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- g. Hotels of fewer than 50 rooms, provided that one or more of the following amenities is available to guests:
 - 1. Swimming pool;
 - 2. Docking Facilities; or
 - 3. Tennis courts;
- h. New antenna-supporting structures, pursuant to Section 146-5(a).

(3) The following uses are permitted as major conditional uses in the Safe Harbor Community Center Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:

- b. Attached and detached dwelling units involving more than 18 units, designated as employee housing as provided for in Section 139-1.
- c. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, of greater than 10,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - 1. An existing curb cut;
 - 2. A signalized intersection; or
 - 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- d. Commercial recreation uses (indoor and outdoor), including amusement or sea life parks and drive-in theaters, provided that:
 - 1. The parcel of land proposed for development does not exceed five acres;
 - 2. The parcel proposed for development is separated from any established residential use by a class C bufferyard; and
 - 3. All outside lighting is designed and located so that light does not shine directly on any established residential use;
- e. Hotels providing 50 or more rooms, provided that:
 - 1. The hotel has restaurant facilities on the premises; and
 - 2. One or more of the following amenities is available to guests:
 - i. Swimming pool; or
 - ii. Docking facilities; or
 - iii. Tennis courts; and
 - 3. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- f. Marinas, provided that:
 - 1. The parcel proposed for development has access to water at least four feet below mean sea level at mean low tide;

2. The sale of goods and services is limited to fuel, food, boating, diving and sport fishing products;
 3. All outside storage areas are screened from adjacent uses by a solid fence, wall, or hedge at least six feet in height; and
 4. Each nonwaterside perimeter setback of the parcel proposed for development must have a class C bufferyard within a side yard setback of no less than ten feet; and
 5. New and existing marine facilities, including marinas, with ten slips or more, or one live-aboard-slip, must provide dedicated sewage pump-out facilities or services.
- g. Wastewater treatment facilities and wastewater treatment collection systems serving uses located in any land use district, provided that:
1. The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;
 2. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally consistent with the character of the surrounding community and minimize the impact of any outdoor storage, temporary or permanent; and
 3. In addition to any district boundary buffers set forth in Chapter 114, Article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
 - i. One native canopy tree for every 25 linear feet of screening structure;
 - ii. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 - iii. The planting bed shall be installed as set forth in Chapter 114, Article IV; and
 - iv. A solid fence may be required upon determination by the planning director.
- ~~v. Heliports or seaplane ports, provided that:~~
- ~~a. The heliport is associated with a governmental service facility, a law enforcement element or a medical services facility;~~
 - ~~b. The heliport or seaplane port is a Federal Aviation Administration certified landing facility;~~
 - ~~c. The landing and departure approaches do not pass over established residential uses or known bird rookeries;~~
 - ~~d. If there are established residential uses within 500 feet of the parcel proposed for development, the hours of operation for non-emergency aircraft shall be limited to daylight; and~~

~~e. The use is fenced or otherwise secured from entry by unauthorized persons;~~

- (4) Allocated Density for Residential Dwelling Units. For purposes of this overlay district, properties shall maintain the allocated density for residential dwelling units permitted under the existing zoning districts.
- (5) Maximum Net Density for Residential Dwelling Units. For purposes of this overlay district, properties shall maintain the maximum net density for residential dwelling units permitted under the existing zoning districts.
- (6) Allocated Density for Hotel/Motel. For purposes of this overlay district, properties shall maintain the allocated density for hotel/motel permitted under the existing zoning districts.
- (7) Maximum Densities for Hotel/Motel and Minimum Open Space. For purposes of this overlay district, the hotel/motel maximum net density for the Mixed Use/Commercial FLUM shall be 20 units per buildable acre and minimum open space shall be 0.20. There shall be no density for the Industrial FLUM.
- (8) Maximum Nonresidential Floor Area for Principal Structures ~~Land Use Intensities and District Open Space.~~ For the purposes of this overlay district, uses with corresponding intensity thresholds shall be cumulative and ~~utilize the floor area ratios as follows~~ shall be in accordance with the following table:

~~Safe Harbor Community Center Overlay District Maximum Nonresidential Land Use Intensities and District Open Space:~~

Land Use	Maximum Floor Area Ratio	Minimum Open Space Ratio ^(a)
Low Intensity Commercial Retail or Restaurant	0.45	0.20
Medium Intensity Commercial Retail or Restaurant	0.45	0.20
High Intensity Commercial Retail or Restaurant	0.30	0.20
Office	0.50	0.20
Commercial Fishing	0.45	0.20
Light Industrial	0.60 ^(b)	0.20
Heavy Industrial <u>(re-development only)</u>	0.40	0.20
Institutional	0.30	0.20
Public Building/Uses	0.60	0.20
Agriculture (Mariculture)	0.45	0.20
Commercial Recreation	0.25	0.20

- (a) Additional open space requirements may apply based on environmental protection criteria – see additional open space ratios in Chapter 118. In accordance with Section 101-2(1), the most restrictive of these ratios applies.
- (b) For properties within the Safe Harbor Community Center Overlay District with Light Industrial land use, the maximum floor area ratio shall be 0.60 in accordance with Policy 101.5.25 of the Comprehensive Plan as of its effective date. Only properties zoned Maritime Industries with an Industrial FLUMs within the Safe Harbor Community Center Overlay District shall have a maximum FAR of 0.60. Properties zoned with a Mixed Use/Commercial FLUM Mixed Use within the Safe Harbor Community Center Overlay District shall have this maximum FAR of 0.45.
- (c) Notwithstanding Section 138-147(a), Enclosed and partially enclosed boat barns shall not count towards Floor Area Ratio within the Safe Harbor Community Center Overlay District.
- (d) In order to preserve and promote recreational and commercial working waterfront uses, as defined by 342.07, F.S., pursuant to Policy 101.5.6., the following criteria shall apply to all lands designated with the Maritime Industries (MI) land use (zoning) district within this land use category:
 - 4. When a mixture of uses is proposed for parcels designated as MI land use (zoning) district, working waterfront and water dependent uses, such as marina, fish house/market, boat repair, boat building, boat storage, or other similar uses but excluding transient uses, shall be preserved by maintaining a minimum of 35% of the upland area of the property for those uses. To incentivize additional preservation of recreational and commercial working waterfront uses, the following shall be available:
 - i. For the preservation of 36-50% of the upland area of property for working waterfront and water dependent uses, up to 20,000 sf. ft. of nonresidential floor area from the NROGO bank shall be provided to the property; and
 - ii. For the preservation of 50% or more of the upland area of property for working waterfront and water dependent uses, the residential density on the property may be developed pursuant to the maximum net density standard without the use of TDRs.

(9) *Parking requirements.*

a. General Requirements.

- 1. Every use shall be provided with off-street parking in accordance with Section 114-67.
- 2. Up to 20 percent of the required parking spaces for nonresidential uses may be replaced with an equivalent number of smaller parking spaces designed to accommodate motorcycles or scooters and other similar modes of transportation.

- b. *Required number of off-street parking spaces.* [Notwithstanding Section 114-67\(e\),](#)
~~t~~The following number of parking spaces shall be provided for each use¹:

Specific Use Category	Minimum Required Number of Parking Spaces Per Indicated Unit of Measure
Single-family dwelling units, including mobile homes on individual lots or parcels	2.0 spaces per dwelling unit or mobile home
Multifamily residential developments	1.5 spaces per dwelling unit
Commercial retail except as otherwise specified in this table	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building and 1.5 spaces per 1,000 sq. ft. of area devoted to outdoor retail sales
Eating and drinking establishments, such as restaurants and bars	For areas devoted to food/beverage service, 1.0 space per 3 seats or 3.0 spaces per 1,000 sq. ft. of nonresidential floor area, whichever total amount is higher. For other areas, 3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building separate from the seating area and devoted to activities other than food/beverage service (including, but not limited to, kitchen, office, retail sales not related to food or beverage and storage)
Commercial recreation (indoor), excluding theaters, conference centers and activity centers	5.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Commercial recreation (outdoor)	5.0 spaces per 1,000 sq. ft. of the parcel that is directly devoted to the outdoor recreational activity, excluding areas used for parking and driveways, required yards and required landscaping and buffer areas
Theaters, conference centers, or activity centers	1.0 space per 3.0 actual seats or based on seating capacity
Offices	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Hotels/ destination resorts	1.0 space per each 1-bedroom transient dwelling unit and 1.0 space plus 0.5 space for each additional bedroom per each 2 or more bedroom transient dwelling unit
Industrial uses; excluding mini-warehouses/self-storage centers; repair or servicing of vehicles; and warehousing	2.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building; and 1.0 space per 1,000 sq. ft. of the parcel that is devoted to outdoor industrial use

¹ ~~This subsection shall replace subsection 114-67©. All other provisions of Sec. 114-67 shall apply as provided in the Code.~~

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 12

Live-aboard	1.0 space per berth
Marinas and commercial fishing facilities	1.0 space per 2 berths plus 1.0 space per 4 dry storage racks
Charter/guide boats, six or fewer passenger capacity	1.0 space per berth
Party and charter/guide boats, more than six passengers capacity	0.3 space per passenger capacity of vessel
Boat ramps	6.0 spaces per ramp; all spaces shall be a minimum of 14 feet by 55 feet, to accommodate trailers and oversized vehicles

c. *Off-site parking facilities.* Notwithstanding Section 114-67(h), the following requirements shall apply to off-site parking facilities for nonresidential uses.

1. Off-site parking facilities shall be permitted and located within the Safe Harbor Community Center Overlay District.
2. A parking agreement shall be required in accordance with Section 114-68.

(10) *Setbacks.*

a. *Front yard setback.* The front yard setback for any structure on each a parcel within the Safe Harbor Community Center Overlay District shall be ~~reduced to a minimum of 10 feet for a more urban look in the Safe Harbor Community Center Overlay District.~~ Street lights and landscape lighting may be located in the front setback.

1. *Accessory driveways and walkways.* Accessory structures, limited to driveways and walkways, may be permitted within a required front yard setback provided they do not exceed six (6) inches in height as measured from grade. In no event shall the total combined area of all accessory structures occupy more than 60 percent of the out required front yard setback area.
2. *Outdoor Lighting.* All outdoor lighting shall comply with Chapter 114, Article VI Outdoor Lighting. Notwithstanding, streetlights and landscape lighting may be located in the front setback.
3. *Signs and landscaping.* Signs as permitted in Chapter 142 and landscaping may be permitted in a required front yard setback.
4. *Fences.* Notwithstanding the provisions of Secs. 114-13(a)(4) and 114(a)(4)c., fences of up to six (6) feet may be permitted, provided they are not located within clear sight triangles as defined in section 114-201 and/or according to FDOT and national AASHTO standards, whichever is more restrictive.

In addition, parcels of land that are developed with single family dwellings may incorporate entry features of greater than six (6) feet within fences, provided all of the following design criteria are met:

- i. The entry feature is defined as a continuous fence or gate, or combination thereof, located contiguous to and on both sides of the main access (driveway) to the property which is designed and intended to control and/or demarcate the access to the property. An "entry feature" includes all walls, buttresses, guy wires, integral signs and decorative features attached thereto up to a maximum width of 12 feet, or 15 percent of the lot width whichever is greater, a maximum height of ten (10) feet, and four (4) feet in depth or six (6) percent of the lot depth whichever is greater as measured from the front property line; and
 - ii. The entry feature shall not be located in any side yard setback required pursuant to Section 131-1; and
 - iii. The entry 1 feature shall be compatible with the existing development in the immediate vicinity, shall be in harmony with the general appearance and character of the community, and shall not be otherwise detrimental to the public welfare; and
 - iv. The entry feature shall be designed and arranged on the site in a manner that minimizes aural and visual impact on the adjacent structures while affording the applicant a reasonable use of the land; and
 - v. The entry feature shall require a building permit for its construction and in addition to the normal building permit application requirements, the application shall include a scaled site plan and elevations for the entry feature that shows the height, width and length of each element of the entry feature applied for, including any decorative or non-functional elements; and identification of the materials composing each element of the structure (e.g. wire, stone, chain-link, wood, etc.).
- b. Shoreline Setback. ~~The shoreline setback for structures containing water-dependent principal or accessory uses within the Safe Harbor Community Center Overlay District shall be the greater of ten (10) feet or the applicable setback prescribed by Florida Department of Environmental Protection or Army Corps of Engineers regulations, whichever regulation is more restrictive, provided such uses do not involve discharge into Safe Harbor or adjacent surface waters.~~ Water-dependent principal or accessory uses within the Safe Harbor Community Center Overlay District ~~existing~~ lawfully established as of the effective date of this section may be redeveloped in their existing footprint in the event of involuntary substantial damage or destruction.
- Water-dependent principal or accessory structures within the Safe Harbor Community Center Overlay District shall be setback the greater of ten (10) feet or the applicable setback prescribed by Florida Department of Environmental

Protection or Army Corps of Engineers regulations, whichever regulation is more restrictive, provided such uses do not involve discharge into Safe Harbor or adjacent surface waters. Such additional uses are limited to waterfront dining areas, pedestrian walkways, public monuments or statues, informational kiosks, fuel or septic facilities, and water-dependent marina uses.

- c. Rear and side yard setbacks. Any rear and side yard setbacks within the within the Safe Harbor Community Center Overlay District shall be reduced to a minimum of 5 feet.
- (11) Outdoor Lighting. All outdoor lighting shall comply with Chapter 114, Article IV Outdoor Lighting. Notwithstanding, street lights and landscape lighting may be located in the front yard setback consistent with subsection g(2)a.
- (12) Signage. ~~Due to the distance from US-1, f~~For purposes of signage in the Safe Harbor Community Center Overlay District, ~~the number of parcels as set forth in the Monroe County, Florida Land Use District Map adopted by the Monroe County Board of Commissioners by Resolution on January 19, 1988 shall be used to determine the maximum amount of signage for a particular parcel~~ to allow for sufficient wayfinding for persons visiting sites within the Safe Harbor Community Center Overlay District. ~~For example, if a particular parcel consisted of 5 parcels as set forth in the Land Use District Map adopted on January 19, 1988, then the maximum amount of signage for that particular parcel shall be determined as if that parcel consisted of 5 parcels.~~ the Planning Director shall approve multiple signs, per entrance way, on a particular parcel under this provision upon being provided good cause.
- (13) CBRS Restrictions. Notwithstanding the provisions of Chapter 138 or any other provision to the contrary, ~~sites~~ parcels within the Safe Harbor Community Center Overlay District which are designated within Coastal Barrier Resources System Unit FL 57 shall not be prohibited from serving as receiver sites for transient, market rate, and affordable dwelling units, provided the applicable site meets all other criteria established in Comprehensive Policy 101.6.8 for a receiver site; and so long as no structure is developed in any portion of the parcel designated as CBRS.
- (14) Drones. The use of unmanned aerial vehicles and/or drones within the Safe Harbor Community Center Overlay District are prohibited.
- (15) District Boundary Bufferyards. No district boundary bufferyard shall be required for parcels within the Safe Harbor Community Center Overlay District. A district boundary bufferyard shall be required if a parcel within the SHCC Overlay District abuts a parcel of a different zoning district that is not within the SHCC Overlay District.

Reason for Proposed Text Amendment

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 15

The Monroe County Year 2030 Comprehensive Plan provides for the Livable CommuniKeys Master Plan which in turn provides for the Master Plan for the Future Development of Stock Island & Key Haven, which provides for the establishment of the Safe Harbor Community Center Overlay District which is the basis of this Amendment.

Text Amendment Request

The Amendment seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the SHCC for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC.

Policy 101.5.6

Although Section 130-140(f)(1)(b)(4) of the Amendment above permits commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area as a minor conditional use, this does not contradict Policy 101.5.6 of the Monroe County Comprehensive Plan, which provides that parcels within the Maritime Industries zoning district shall be limited to uses of less than 5,000 square feet of floor area. The specified permitted minor conditional use can only occur by consolidation of parcels as set forth above in Section 130-140(c) of the Amendment.

Parking

The parking calculations provided are based on: (1) historical parking utilization data in the SHCC; (2) the requirements of the City of Key West Land Development Regulations which contain similar parking demands for liveaboards and wet slips in urban areas; (3) as well as 15 years of data evidencing that dry slips are utilized half the time wet slips are utilized and generate approximately half the parking demand. Because of Safe Harbor's proximity to Key West, alternative modes of transportation, including bicycles and scooters, are utilized for transportation. A parking study has been submitted along with this amendment supporting the adjustments to parking contained in the Amendment.

Setback

The SHCC Overlay District will reduce the required front setback for each parcel within the SHCC Overlay District to 10 feet which will allow for a more accessible and inviting atmosphere for the buildings in the SHCC Overlay District. Further, existing water dependent principal and accessory structures will be permitted to be built back in the event of involuntary destruction due a natural disaster, fire or other issue and new water dependent uses will be situated to best take advantage of Safe Harbor. Safe Harbor Marina, Keys Fresh Seafood, 3D boatyard all have principal water dependent structures that if destroyed would not be capable of being rebuilt. This code provision protects these property owners' long term investments.

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 16

Signage

There is a need for a change in the regulations related to SHCC Overlay District. Additionally, this permits ease of wayfinding as the SHCC Overlay District is further from US1. Further, this is in compliance with the action items adopted in the LCP.

Military Installation Area of Impact

The Safe Harbor Community Center Overlay District is located in a noise zone of less than 65 DNL (Day-Night Average Sound level) noise contour pursuant to the 2013 Aircraft Noise Study for Naval Air Station Key West, and the Safe Harbor Community Center Overlay District is compatible with the Military Installation Area of Impact (MIAI).

Density

Prior to 2017, the Land Development Code open space density was zero (0) in Maritime Industries. The Safe Harbor Community Center District Overlay provides for development at this prior level, but accounts for open space, requiring a portion of the property to be open but still allowing the same maximum net density as was provided in the land development code until its 2017 amendment.

Boat Barns/Racks

This Amendment will allow development of boat racks which are covered and enclosed (provided the same are not associated with retail sales of boats), rather than just covered, unenclosed boat racks, without requiring NROGO square footage.

The Amendment eliminates an artificial distinction with no significance to the NROGO scheme. There is no functional or operational difference between covered, unenclosed or enclosed on three sides boat racks and covered, enclosed boat racks. However, under the current Code, a developer must obtain NROGO allocations and/or exemptions to construct an enclosed boat storage building but can build a non-enclosed (three-sided) boat storage building without the necessity of obtaining NROGO. This incentivizes development and continued use of unenclosed boat storage and discourages development and use of enclosed boat storage which is more secure from a security perspective and less susceptible to damage in a wind event such as a hurricane.

Simple physics dictates that a one, two, or three-sided building has an increased risk of sustaining damage in a wind event as opposed to a four-sided, enclosed building. Because of the lack of enclosure, wind blowing into the unenclosed structure can create a “sail” effect, stressing the structural components of the building. An enclosed building presents no such opportunity. From a practical perspective, designs of enclosed boat storage buildings which are rated for hurricane-force winds are readily available, whereas three-and-fewer sided buildings are not typically designed to withstand high-intensity winds.

There is no public policy justification for the current disparate treatment of enclosed and unenclosed boat racks. Both enclosed and unenclosed boat racks are “constructed, installed or portable, the use of which requires a location on a parcel of land,” and as such meet the Code definition of “structure.”

Figure 1, below, depicts an elevation and an aerial of an enclosed, four-sided structure intended for boat dry rack storage. Construction of this structure requires NROGO:

Figure 1:

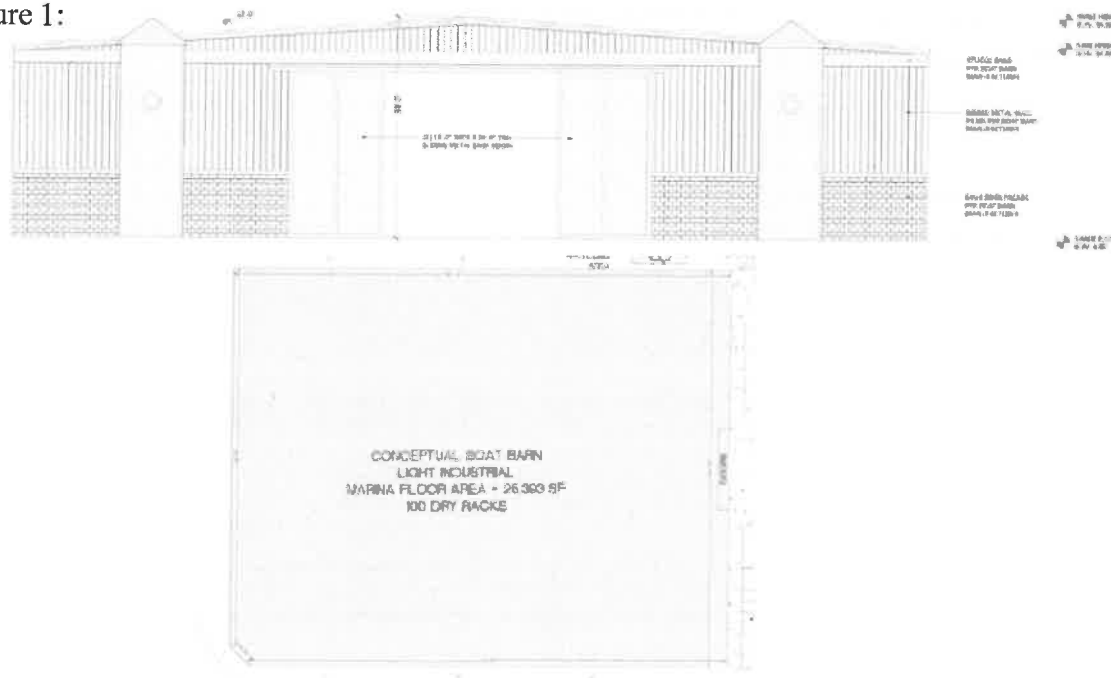
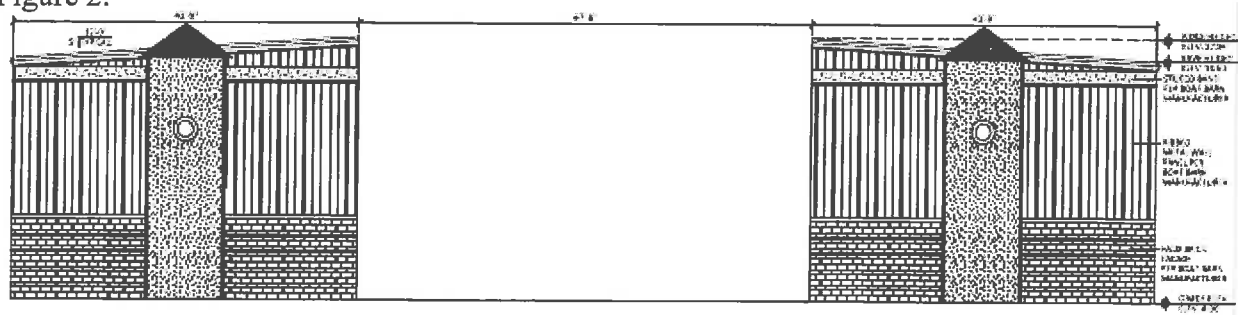


Figure 2, below, depicts an elevation and an aerial of the same structure “cut” in half, creating two three-sided unenclosed structures. Construction of these structures for boat storage use unrelated to retail sales does not require NROGO:

Figure 2:

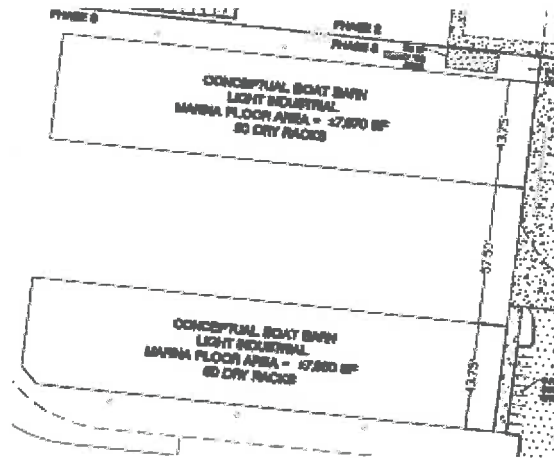


Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 18



The above Figures illustrate the absurdity of the current Code and the practical need for the Amendment. The Amendment will not change the function of the Code in any way but will allow developers and port operators to more easily and economically meet Florida Building Code requirements for boat rack structures, while decreasing the risk to boats stored inside as addressed herein.

Consistency with the Monroe County Year 2030 Comprehensive Plan, [the Stock Island-Key Haven Liveable Communikeys Plan](#), the Florida Statutes, and Principles for Guiding Development

A. The Proposed Amendment implements and is consistent with the following Goals, Objectives and Policies of the Monroe County Year 2030 Comprehensive Plan. Specifically, the amendment furthers:

Objective 101.4: Monroe County shall regulate nonresidential development to maintain a balance of land uses to serve the needs of the future population of Monroe County.

Policy 101.4.5 The NROGO allocation system shall not apply to the following nonresidential developments:

5. Industrial uses in the Maritime Industries (MI) and the Industrial (I) land use (zoning) districts.

12. Recreational and commercial working waterfront uses, as defined by §342.07, F.S., excluding transient uses. These exemptions shall not be available on lands designated as Tier I or, if clearing is proposed, designated as Tier III-A (SPA).

GOAL 217: The coastal area of Monroe County shall be managed to promote public access to the marine and coastal waters, to balance the protection of recreational and commercial working waterfront and commercial fishing uses and the preservation and protection of coastal and natural resources and the community character. [§163.3178(2)(g), F.S.]

Policy 217.1.1: The strategy to preserve and protect commercial fishing and recreational and commercial working waterfront uses shall include the following:

1. Exemptions from the requirements of the Permit Allocation System for new nonresidential development, pursuant to Policy 101.4.5;

GOAL 502: All existing and future residents and visitors of Monroe County shall be served with ports² in a manner that maximizes safety, convenience, economic benefit, environmental compatibility and consistency with other elements of the comprehensive plan.

Objective 502.1: Because of the Florida Keys' unique nature as an archipelago, Monroe County shall promote the preservation and enhancement of the existing ports and port related activities.

Policy 101.5.6: The principal purpose of the Mixed Use/Commercial (MC) future land use category is to provide for the establishment of mixed use commercial land use (zoning) districts where various types of commercial retail and office may be permitted at intensities which are consistent with the community character and the natural environment. Employee housing and commercial apartments are also permitted. In addition, Mixed Use/Commercial land use districts are to establish and conserve areas of mixed uses, which may include maritime industry, light industrial uses, commercial fishing, transient and permanent residential, institutional, public, and commercial retail uses.

This future land use category is also intended to allow for the establishment of mixed use development patterns, where appropriate. Various types of residential and nonresidential uses may be permitted; however, heavy industrial uses and similarly incompatible uses shall be prohibited. The County shall continue to take a proactive role in encouraging the preservation and enhancement of community character and recreational and commercial working waterfronts.

Policy 101.5.22: The principal purpose of the Community Center (CC) overlay is to identify a defined geographic developmental focus area according to each of the adopted Livable CommuniKeys Community Master Plans. The intent of this overlay is to implement the action items identified in the Livable CommuniKeys Community Master Plans, pursuant to Policy 101.19.2. Within three years of the adoption of the 2030 Comprehensive Plan, Monroe County shall adopt the Community Center overlays as identified by the Livable CommuniKeys Community Master Plans included in Policy 101.19.2 on the Future Land Use Map. Maximum permitted densities and intensities shall be in accordance with the underlying land use categories.

² "Port" is defined in the Comprehensive Plan as "a place alongside navigable water with facilities for the loading and unloading of vessels and cargo." Private marinas meet this definition.

GOAL 601: Monroe County shall adopt programs and policies to facilitate access by residents to adequate and affordable housing that is safe, decent, and structurally sound, and that meets the needs of the population based on type, tenure characteristics, unit size and individual preferences.

B. The Proposed Amendment implements and is consistent with the following Goals, Strategies and Action Items of the Livable CommuniKeys Program for Stock Island and Key Haven. Specifically, the amendment furthers:

Action Item 1.1.2: Amend the parking requirements in the overlay district by offering a parking credit for on-street parking spaces located directly in front of the development being served.

Action Item 1.1.3: Amend the floor area ratios in the overlay district for commercial retail and industrial uses.

Action Item 1.1.5: Create an overlay district to resolve issues with non-conforming structures and uses in the MU and MI land use districts.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density.

Strategy 1.2 Create a “downtown” district.

Action Item 1.2.1: Identify Safe Harbor as a focal point of the “downtown” district. As part of this designation, analyze the appropriate boundaries for the “downtown” district and propose revisions to the Land Development Regulations.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density

Goal One: Provide space for a working waterfront and its supporting industries.

Goal Two: Preserve commercial fishing.

Goal Three: Enhance the area’s identity as a water-oriented, commercial fishing community.

Goal Four: Revitalize the port area while improving its physical setting and appearance.

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 21

Goal Five: Promote opportunities for the diversification of the local water-dependent economy.

Goal Six: Provide and improve waterfront access.

Goal Seven: Create an efficient, visually attractive network of intra-island corridors.

C. The Proposed Amendment is consistent with Florida Statutes

There are no provisions of the Florida Statutes inconsistent with the proposed Amendment.

D. The amendment is consistent with the Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7), Florida Statutes. The Proposed Amendment specifically furthers the following Principles (Bolded):

For the purposes of reviewing the consistency of the adopted plan, or any amendments to that plan, with the principles for guiding development, and any amendments to the principles, the principles shall be construed as a whole and specific provisions may not be construed or applied in isolation from the other provisions.

(a) Strengthening local government capabilities for managing land use and development so that local government is able to achieve these objectives without continuing the area of critical state concern designation.

(b) Protecting shoreline and marine resources, including mangroves, coral reef formations, seagrass beds, wetlands, fish and wildlife, and their habitat.

(c) Protecting upland resources, tropical biological communities, freshwater wetlands, native tropical vegetation (for example, hardwood hammocks and pinelands), dune ridges and beaches, wildlife, and their habitat.

(d) Ensuring the maximum well-being of the Florida Keys and its citizens through sound economic development.

(e) Limiting the adverse impacts of development on the quality of water throughout the Florida Keys.

(f) Enhancing natural scenic resources, promoting the aesthetic benefits of the natural environment, and ensuring that development is compatible with the unique historic character of the Florida Keys.

(g) Protecting the historical heritage of the Florida Keys.

(h) Protecting the value, efficiency, cost-effectiveness, and amortized life of existing and proposed major public investments, including:

1. The Florida Keys Aqueduct and water supply facilities;
2. Sewage collection, treatment, and disposal facilities;
3. Solid waste treatment, collection, and disposal facilities;
4. Key West Naval Air Station and other military facilities;
5. Transportation facilities;
6. Federal parks, wildlife refuges, and marine sanctuaries;
7. State parks, recreation facilities, aquatic preserves, and other publicly owned properties;
8. City electric service and the Florida Keys Electric Co-op; and
9. Other utilities, as appropriate.

(i) Protecting and improving water quality by providing for the construction, operation, maintenance, and replacement of stormwater management facilities; central sewage collection; treatment and disposal facilities; and the installation and proper operation and maintenance of onsite sewage treatment and disposal systems.

(j) Ensuring the improvement of nearshore water quality by requiring the construction and operation of wastewater management facilities that meet the requirements of ss. 381.0065(4)(l) and 403.086(10), as applicable, and by directing growth to areas served by central wastewater treatment facilities through permit allocation systems.

(k) Limiting the adverse impacts of public investments on the environmental resources of the Florida Keys.

(l) Making available adequate affordable housing for all sectors of the population of the Florida Keys.

(m) Providing adequate alternatives for the protection of public safety and welfare in the event of a natural or manmade disaster and for a post disaster reconstruction plan.

(n) Protecting the public health, safety, and welfare of the citizens of the Florida Keys and maintaining the Florida Keys as a unique Florida resource.

Pursuant to Section 380.0552(7) Florida Statutes, the proposed amendment is consistent with the Principles for Guiding Development as a whole and is not inconsistent with any Principle.

Changed Projections, Assumptions and New Issues

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 23

The Board of County Commissioners may consider an amendment if the change is based on one or more factors, including changed projections (e.g. regarding public service needs) from those on which the text was based, changed assumptions (e.g. regarding demographic trends), data errors, new issues, or recognition of a need for additional detail or comprehensiveness.

The proposed Amendment is based on a need for additional detail or comprehensiveness, and the SHCC Overlay District provides a framework consistent with the Comprehensive Plan and as set forth in the Livable CommuniKeys Program for Stock Island and Key Haven.

Safe Harbor and Stock Island Marina Village

The construction of The Perry Hotel and Stock Island Marina Village have brought more tourists, visitors, and jobs to the area comprising the SHCC Overlay District. “A developing market has emerged due to Stock Island’s ability to provide world-class dockage amenities. Stock Island’s many attractive features include great restaurants, entertainment, art, and architecture, as well as beautiful golf courses, and the best year-round fishing in the U.S. There are many marinas surrounding Key West, but Stock Island Marina Village leads the industry in technology, infrastructure, and hospitality. The marina has more deepwater capacity than any other marina in the Keys, and is safely nestled within a safe harbor, providing shelter from excessive wind and seas, but maintains easy access to the open Atlantic. ... The marina — part of Stock Island’s Historic Seaport — opened its doors in the 1940s but has undergone complete redevelopment over the past four years, including the newly installed Bellingham concrete floating docks, new fuel system with 60,000 gallon capacity, 100-Room boutique style hotel, three on-site restaurants, and even more to come!” (<https://southernboating.com/destinations/us-atlantic/stock-island-marina-village-key-west-florida/>).

Ports such as the Safe Harbor Marina and Stock Island Marina Village are highly desirable destinations for boaters and fishermen from all over the world and are prime launching areas for sea travel from Florida to Cuba. “A ferry terminal for U.S.-Cuba travel, which has been a talking point for locals..., would require a marina such as Safe Harbor on Front Street or the Stock Island Marina Village on Shrimp Road, to be outfitted as an international port of entry.” *In the Shadow of Key West, Change Ahead for a Neighboring Island* (Miami Herald, August 16, 2015).

Bernstein Park

The area comprising the SHCC Overlay District is undergoing a massive amount of change, and the SHCC Overlay District is necessary to keep up with and address the changing landscape of the area. Monroe County is close to completion of the reconstruction of neighboring Bernstein Park, at a cost of approximately \$8 million, adding 2 soccer fields, a basketball court, exercise trail, a playground, and updated field lights. *This Keys Island Is Changing Right Before Our Eyes* (Miami Herald, November 27, 2016).

Boat Barn

The current Code disparately treats enclosed, four-sided boat storage racks and unenclosed, three-or-fewer sided boat storage racks with no meaningful distinction. The operational, concurrency, and environmental impacts are identical for enclosed boat racks as for three-sided, unenclosed boat racks. The text of the Amendment is consistent with the Code which encourages more sound, attractive, and practical development of boat storage racks.

The proposed Amendment is based on changed projections as to the needs of the public. As Monroe County braces itself to deal with the increasingly-evident impacts of climate change, an approach which considers and encourages best practices for storm readiness and hardening is necessary.

According to the U.S. National Climate Assessment Report, “Climate Change Impacts” (the “**NCA Report**”), produced by an advisory committee chartered under the Federal Advisory Committee Act, for the Subcommittee on Global Change Research and at the request of the U.S. Government, “[t]here has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s...[citations omitted] These include measures of intensity, frequency, and duration as well as the number of strongest (category 4 and 5) storms.” See NCA Report, P. 41. A copy of the NCA Report is attached hereto and incorporated herein as **Exhibit “B”**.

By providing for the SHCC Overlay District to accommodate enclosed boat rack structures, the Code will encourage storm-hardened and practical development of boat storage facilities. The recent wind-damage and water-damage impacts of Hurricane Irma and the projected increased intensity of Atlantic hurricanes mitigate for policies which encourage the protection of personal property (including boats) during storm events, and for investment by developers and port operators in infrastructure which provide peace of mind to visitors and tourists who may otherwise be wary to store boats in the Florida Keys for seasonal use as a result of hurricane impacts.

Furthermore, despite the best efforts of law enforcement, marine-related theft is on the rise in the Florida Keys. Pursuant to the June 21, 2017 Keynoter Article, “Marine Related Thefts on Rise Throughout the Florida Keys” (the “**Marine Theft Article**”), the theft of at least three (3) outboard engines, one (1) outboard lower unit, and three separate incidents of fishing gear theft from boats occurred over a ten-day span in June, 2017. A copy of the Marine Theft Article is attached hereto and incorporated herein as **Exhibit “C”**. One need only pick up a local newspaper any given week to find reports of the increased prevalence of marine-related theft.

The permissible development of enclosed boat racks allows developers and port operators to provide an additional option for boat storage which provides increased security to both tourist and resident boat users. It is axiomatic that an enclosed, locked boat storage structure reduces the risk of marine-related (engine and engine parts, fishing equipment, electronic equipment) theft as compared to structures where boats are visible to the naked eye. While the Marine Theft Article provides simply that “[m]ost boat, motor, and fishing and diving equipment thefts can be easily prevented with minimum effort. At the end of the day, remove your gear from the boat and lock

Ms. Emily Schemper, Director
RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)
August 6, 2020
Page 25

it up[,]” motors cannot be readily removed from boats and boats themselves are vulnerable to theft when stored anywhere other than enclosed storage under lock and key. The Amendment will encourage theft-deterrence in the marine sphere and allow port operators to more economically provide in-demand storage, explicitly furthering Goal 502 of the Comprehensive Plan that “[a]ll existing and future residents and visitors of Monroe County shall be served with ports in a manner that *maximizes safety, convenience, economic benefit*, environmental compatibility and consistency with other elements of the comprehensive plan.” (*emphasis added*).

No Adverse Community Change

There will be no adverse change to unincorporated Monroe County at large if the Amendment is approved. As discussed herein, there are no increased concurrency, environmental, or practical impacts associated with implementation of the SHCC Overlay District. All such development will be required to comply with level of service, concurrency, and performance standards as set forth in the Code. Moreover, it allows for infill at or near the primary employment center of Key West and Stock Island while keeping density outside the more rural lower Florida Keys.

Conclusion

Based on the foregoing, Applicant requests consideration and adoption of the Amendment. Thank you for your consideration and assistance, and please feel free to contact me with any questions.

Sincerely,

Chelsea C. Vanadia

CCV/BWS/kt

Enclosures

Cc (*Electronically*):

Cheryl Cioffari, Assistant Director of Planning, (Cheryl@MonroeCounty-FL.Gov)

Ilze Aguila, Sr. Planning Commission Coordinator, (Aguila-Ilze@MonroeCounty-FL.Gov)

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 26

Exhibit "A"

Monroe County Land Use Map Dated January 19, 1988

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 27

Exhibit "B"

NCA Report

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Director

RE: Fourth Amendment to Proposed Text Amendment (File No.: 2018-169)

August 6, 2020

Page 28

Exhibit "C"

Marine Theft Article

PREVIOUSLY PROVIDED

SMITH/HAWKS

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July 15, 2020

VIA EMAIL and
FEDEX: 7709 6193 3134

Emily Schemper,
Senior Director
Monroe County Planning & Environmental Resources Department
2798 Overseas Highway, Suite 400
Marathon, FL 33050

RE: Third Amendment to Proposed Text Amendment to Provide Text for
Section 130-140 of the Monroe County Land Development Regulations
(File No. 2018-169)

Dear Emily,

Please allow this letter to serve as a third amendment to the Land Development Regulation Text Amendment Application (“**Original Application**”) made on behalf of Longstock II, LLC, a Florida limited liability company (“**Applicant**”), received by Monroe County on August 15, 2018, a copy of which is attached hereto and incorporated herein as Exhibit “A”, first amended on December 10, 2018, and further amended on March 18, 2019.

A copy of this third amendment is enclosed, please date-stamp and return the copy using the enclosed self-addressed envelope.

Additions are underlined in blue and deletions are struck through in ~~red~~. Please note that the baseline for the revisions is the amendment submitted on March 18, 2019.

The Proposed Amendment

Sec. 130-140. Safe Harbor Community Center Overlay District (SHCC).

1. *Purpose and intent.* The purpose of the Safe Harbor Community Center (SHCC) Overlay District is to implement applicable goals, objectives, and policies of the Comprehensive Plan promoting a working waterfront and public access to the marine and coastal waters and

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Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 2

allowing for redevelopment in a non-environmentally sensitive area of the Lower Keys for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses, and preserving and protecting coastal and natural resources and the community character. The intent is to protect and maintain the character of the Safe Harbor area while allowing redevelopment/infill within the overlay district, an area that is the result of dredge and fill which has been developed with nonresidential uses.

Furthermore, the purpose of the SHCC Overlay District is to implement the goals, strategies and action items of the Stock Island – Key Haven Livable Communikeys Plan and the Stock Island Harbor Preservation / Redevelopment and Intra-Island Corridor Enhancement Plan to encourage redevelopment that maintains and enhances the economic diversity of the community; direct future residential and commercial activities to areas most suitable in the Planning Area; preserve and increase the number of housing units available for low and very low income families; maintain affordable housing while providing for a mix of housing options; maintain and enhance the community character of a diverse and unique mixed-use community, separate from Key West; and maintain and enhance natural resources, taking care to improve and protect water quality and beautiful and preserve open space; enhance existing park facilities and provide additional resources for active and passive land-based recreation and protect shoreline access for water based recreational activities; provide for all residential of the planning area a safe, efficient and viable transportation system for the movement of people and goods; preserve the working waterfront, revitalize the portarea while improving the physical setting, accommodate a diversity of water-oriented activities and people, connect the port area to the surrounding community, provide access along the waterfront and to respect and reinforce the heritage and character of the community.

2. *Boundary.* The Safe Harbor Community Center Overlay District shall be shown as an overlay district on the Official Land Use District Map. The Safe Harbor Community Center Overlay District shall be comprised of that certain area bounded by Front Street to the east, Fourth Avenue to the north, Fifth Avenue to the north, Shrimp Road to the west, and Shrimp Road to the south but excluding that certain property owned by the Utility Board of the City of Key West and Florida Keys Aqueduct Authority bounded by Front Street to the east.

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 3



SHCC Overlay District Boundaries outlined in Orange

3. Pursuant to Monroe County Comprehensive Plan Policy 101.5.6, the limitation of 5,000 square feet of floor area for commercial retail, restaurant uses, or any combination thereof shall apply to parcels as they existed as of September 15, 1986 ~~the date of adoption of the Land Development Regulations in 1986~~ and as identified in the Monroe County Land Use Map dated January 19, 1988 attached hereto as **Exhibit "A"**.
4. Notwithstanding any provision to the contrary, lawfully established non-residential structures which are non-conforming as to intensity within the Safe Harbor Community Center Overlay District as of the effective date of this section may be redeveloped up to their existing square footage in the event of ~~involuntary~~ substantial damage or destruction.
5. In accordance with Sections 138-51(c) and 138-50(j)(3), NROGO allocations or transfers over 10,000 square feet shall be permitted into the Safe Harbor Community Center Overlay District.
6. Within the boundaries of the Safe Harbor Community Center Overlay District, the permitted and conditional uses in subsections (1)(b) and (c) shall be enforced, in lieu of Section 130-85, Maritime Industries, and Section 130-88, Mixed Use; the maximum hotel/motel density in subsection (2) shall be enforced in lieu of Section 130-162; and the nonresidential land use

intensities in subsection (3) shall be enforced in lieu of Section 130-164, maximum nonresidential land use intensities and district open space.

(1) *Permitted uses.* ~~Safe Harbor Community Center Overlay District Permitted Uses.~~ The following uses are permitted as of right in the Safe Harbor Community Center [\(SHCC\)](#) Overlay District:

- a. [Accessory uses;](#)
- b. Attached and detached dwellings involving less than six units, designated as employee housing as provided for in Section 139-1;
- c. Attached wireless communications facilities, as accessory uses, pursuant to section 146-5(d);
- d. Collocations on existing antenna-supporting structures, pursuant to Section 146-5(c);
- e. Commercial apartments involving less than six dwelling units, but tourist housing uses, vacation rental use, of commercial apartments is prohibited.
- f. Commercial fishing;
- g. [Commercial recreational uses limited to:](#)
 - i. [Bowling alleys;](#)
 - ii. [Tennis and racquet ball courts;](#)
 - iii. [Miniature golf and driving ranges;](#)
 - iv. [Theaters;](#)
 - v. [Health clubs; and](#)
 - vi. [Swimming pools;](#)
- h. Commercial retail, restaurant uses, or any combination thereof, of less than 5,000 square feet of floor area;
- i. Continuation and [redevelopment](#) of [lawful](#) nonconforming existing heavy industrial uses [consistent with Comprehensive Plan Policy 101.8.5;](#)
- j. Detached dwellings;
- k. Institutional residential uses, involving less than ten dwelling units or rooms;
- l. Institutional uses;
- m. Light industrial uses;
- n. Office uses of less than 5,000 square feet of floor area;
- o. Public buildings and uses;
- p. Replacement of an existing antenna-supporting structure pursuant to Section 146-5(b);
- q. Satellite earth stations, as accessory uses, pursuant to section 146-5(f);
- r. Stealth wireless communications facilities, as accessory uses, pursuant to section 146-5(e); and
- s. Wastewater nutrient reduction cluster systems that serve less than ten residences; [provided that:](#)
 1. [The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;](#)

2. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally consistent with the character of the surrounding community and shall minimize the impact of any outdoor storage, temporary or permanent; and
3. In addition to any district boundary buffers set forth in chapter 114, article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
 - i. One native canopy tree for every 25 linear feet of screening structure;
 - ii. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 - iii. The planting bed shall be installed as set forth in chapter 114, article IV; and
 - iv. A solid fence may be required upon determination by the planning director.

(2) The following uses are permitted as minor conditional uses in the Safe Harbor Community Center (SHCC) Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:

- a. Agricultural uses, limited to mariculture, provided that:
 1. The parcel proposed for development is separated from any established residential uses by at least a class C bufferyard; and
 2. All outside storage areas are screened from adjacent uses by a solid fence, wall or hedge at least six feet in height;
- b. Attached and detached dwellings involving six to 18 units, designated as employee housing as provided for in Section 139-1.
- c. Commercial apartments involving more than six dwelling units, provided that:
 1. The hours of operation of the commercial uses proposed in conjunction with the apartments are compatible with residential uses;
 2. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 3. Tourist housing uses, including vacation rental use of commercial apartments is prohibited;

- d. Commercial apartments involving six to 18 dwelling units, provided that:
 - i. The hours of operation of the commercial uses are compatible with residential uses;
 - ii. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 - iii. Tourist housing uses, including vacation rental uses, of commercial apartments are prohibited;
- e. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area, provided that access to U.S. 1 is by way of:
 - 1. An existing curb cut;
 - 2. A signalized intersection; or
 - 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- f. Commercial retail, office, restaurant uses, or any combination thereof, of high intensity, and of less than 5,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - 1. An existing curb cut;
 - 2. A signalized intersection; or
 - 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- g. Hotels of fewer than 50 rooms, provided that one or more of the following amenities is available to guests:
 - 1. Swimming pool;
 - 2. Docking Facilities; or
 - 3. Tennis courts;
- h. New antenna-supporting structures, pursuant to Section 146-5(a).

(3) The following uses are permitted as major conditional uses in the Safe Harbor Community Center Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:

- b. Attached and detached dwelling units involving more than 18 units, designated as employee housing as provided for in Section 139-1.
- c. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, of greater than 10,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - 1. An existing curb cut;
 - 2. A signalized intersection; or
 - 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- d. Commercial recreation uses (indoor and outdoor), including amusement or sea life parks and drive-in theaters, provided that:
 - 1. The parcel of land proposed for development does not exceed five acres;
 - 2. The parcel proposed for development is separated from any established residential use by a class C bufferyard; and
 - 3. All outside lighting is designed and located so that light does not shine directly on any established residential use;
- e. Hotels providing 50 or more rooms, provided that:
 - 1. The hotel has restaurant facilities on the premises; and
 - 2. One or more of the following amenities is available to guests:
 - i. Swimming pool; or
 - ii. Docking facilities; or
 - iii. Tennis courts; and
 - 3. Access to U.S. 1 is by way of:
 - i. An existing curb cut;
 - ii. A signalized intersection; or
 - iii. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
- f. Marinas, provided that:
 - 1. The parcel proposed for development has access to water at least four feet below mean sea level at mean low tide;

2. The sale of goods and services is limited to fuel, food, boating, diving and sport fishing products;
 3. All outside storage areas are screened from adjacent uses by a solid fence, wall, or hedge at least six feet in height; and
 4. Each nonwaterside perimeter setback of the parcel proposed for development must have a class C bufferyard within a side yard setback of no less than ten feet; and
 5. New and existing marine facilities, including marinas, with ten slips or more, or one live-aboard-slip, must provide dedicated sewage pump-out facilities or services.
- g. Wastewater treatment facilities and wastewater treatment collection systems serving uses located in any land use district, provided that:
1. The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;
 2. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally consistent with the character of the surrounding community and minimize the impact of any outdoor storage, temporary or permanent; and
 3. In addition to any district boundary buffers set forth in Chapter 114, Article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
 - i. One native canopy tree for every 25 linear feet of screening structure;
 - ii. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 - iii. The planting bed shall be installed as set forth in Chapter 114, Article IV; and
 - iv. A solid fence may be required upon determination by the planning director.
- ~~v. Heliports or seaplane ports, provided that:~~
- ~~a. The heliport is associated with a governmental service facility, a law enforcement element or a medical services facility;~~
 - ~~b. The heliport or seaplane port is a Federal Aviation Administration certified landing facility;~~
 - ~~c. The landing and departure approaches do not pass over established residential uses or known bird rookeries;~~
 - ~~d. If there are established residential uses within 500 feet of the parcel proposed for development, the hours of operation for non-emergency aircraft shall be limited to daylight; and~~

~~e. The use is fenced or otherwise secured from entry by unauthorized persons;~~

- (4) Allocated Density for Residential Dwelling Units. For purposes of this overlay district, properties shall maintain the allocated density for residential dwelling units permitted under the existing zoning districts.
- (5) Maximum Net Density for Residential Dwelling Units. For purposes of this overlay district, properties shall maintain the maximum net density for residential dwelling units permitted under the existing zoning districts.
- (6) Allocated Density for Hotel/Motel. For purposes of this overlay district, properties shall maintain the allocated density for hotel/motel permitted under the existing zoning districts.
- (7) *Maximum Densities for Hotel/Motel and Minimum Open Space.* For purposes of this overlay district, the hotel/motel maximum net density shall be 20 units per acre and minimum open space shall be 0.20.
- (8) *Maximum Nonresidential Floor Area for Principal Structures ~~Land Use Intensities and District Open Space~~.* For the purposes of this overlay district, uses with corresponding intensity thresholds shall be cumulative and ~~utilize the floor area ratios as follows~~ shall be in accordance with the following table:

~~Safe Harbor Community Center Overlay District Maximum Nonresidential Land Use Intensities and District Open Space:~~

Land Use	Maximum Floor Area Ratio	Minimum Open Space Ratio ^(a)
Low Intensity Commercial Retail or Restaurant	<u>0.45</u>	0.20
Medium Intensity Commercial Retail or Restaurant	<u>0.45</u>	0.20
High Intensity Commercial Retail or Restaurant	0.30	0.20
Office	0.50	0.20
Commercial Fishing	0.45	0.20
Light Industrial	0.60 ^(b)	0.20
Heavy Industrial <u>(re-development only)</u>	0.40	0.20
Institutional	0.30	0.20
Public Building/Uses	0.60	0.20
Agriculture (Mariculture)	0.45	0.20
Commercial Recreation	0.25	0.20
(a) Additional open space requirements may apply based on environmental protection criteria – see additional open space ratios in Chapter 118. In accordance with Section 101-2(1), the most restrictive of these ratios applies.		

- (b) For properties within the Safe Harbor Community Center Overlay District with Light Industrial land use, the maximum floor area ratio shall be 0.60 in accordance with Policy 101.5.25 of the Comprehensive Plan as of its effective date. Only properties zoned Maritime Industries within the Safe Harbor Community Center Overlay District shall have a maximum FAR of 0.60. Properties zoned Mixed Use within the Safe Harbor Community Center Overlay District shall have this maximum FAR of 0.45.
- (c) Notwithstanding Section 138-147(a), Enclosed and partially enclosed boat barns shall not count towards Floor Area Ratio within the Safe Harbor Community Center Overlay District.
- (d) In order to preserve and promote recreational and commercial working waterfront uses, as defined by 342.07, F.S., pursuant to Policy 101.5.6., the following criteria shall apply to all lands designated with the Maritime Industries (MI) land use (zoning) district within this land use category:
 - 4. When a mixture of uses is proposed for parcels designated as MI land use (zoning) district, working waterfront and water dependent uses, such as marina, fish house/market, boat repair, boat building, boat storage, or other similar uses but excluding transient uses, shall be preserved by maintaining a minimum of 35% of the upland area of the property for those uses. To incentivize additional preservation of recreational and commercial working waterfront uses, the following shall be available:
 - i. For the preservation of 36-50% of the upland area of property for working waterfront and water dependent uses, up to 20,000 sf. ft. of nonresidential floor area from the NROGO bank shall be provided to the property; and
 - ii. For the preservation of 50% or more of the upland area of property for working waterfront and water dependent uses, the residential density on the property may be developed pursuant to the maximum net density standard without the use of TDRs.

(9) *Parking requirements.*

a. General Requirements.

- 1. Every use shall be provided with off-street parking in accordance with Section 114-67.
- 2. Up to 20 percent of the required parking spaces for nonresidential uses may be replaced with an equivalent number of smaller parking spaces designed to accommodate motorcycles or scooters and other similar modes of transportation.

b. *Required number of off-street parking spaces. Notwithstanding Section 114-67(e),*
†The following number of parking spaces shall be provided for each use[†]:

[†] This subsection shall replace subsection 114-67©. All other provisions of Sec. 114-67 shall apply as provided in the Code.

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 11

Specific Use Category	Minimum Required Number of Parking Spaces Per Indicated Unit of Measure
Single-family dwelling units, including mobile homes on individual lots or parcels	2.0 spaces per dwelling unit or mobile home
Multifamily residential developments	1.5 spaces per dwelling unit
Commercial retail except as otherwise specified in this table	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building and 1.5 spaces per 1,000 sq. ft. of area devoted to outdoor retail sales
Eating and drinking establishments, such as restaurants and bars	For areas devoted to food/beverage service, 1.0 space per 3 seats or 3.0 spaces per 1,000 sq. ft. of nonresidential floor area, whichever total amount is higher. For other areas, 3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building separate from the seating area and devoted to activities other than food/beverage service (including, but not limited to, kitchen, office, retail sales not related to food or beverage and storage)
Commercial recreation (indoor), excluding theaters, conference centers and activity centers	5.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Commercial recreation (outdoor)	5.0 spaces per 1,000 sq. ft. of the parcel that is directly devoted to the outdoor recreational activity, excluding areas used for parking and driveways, required yards and required landscaping and buffer areas
Theaters, conference centers, or activity centers	1.0 space per 3.0 actual seats or based on seating capacity
Offices	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Hotels/ destination resorts	1.0 space per each 1-bedroom transient dwelling unit and 1.0 space plus 0.5 space for each additional bedroom per each 2 or more bedroom transient dwelling unit
Industrial uses; excluding mini-warehouses/self-storage centers; repair or servicing of vehicles; and warehousing	2.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building; and 1.0 space per 1,000 sq. ft. of the parcel that is devoted to outdoor industrial use
Live-aboard	1.0 space per berth
Marinas and commercial fishing facilities	1.0 space per 2 berths plus 1.0 space per 4 dry storage racks
Charter/guide boats, six or fewer passenger capacity	1.0 space per berth

Party and charter/guide boats, more than six passengers capacity	0.3 space per passenger capacity of vessel
Boat ramps	6.0 spaces per ramp; all spaces shall be a minimum of 14 feet by 55 feet, to accommodate trailers and oversized vehicles

- c. *Off-site parking facilities.* Notwithstanding Section 114-67(h), the following requirements shall apply to off-site parking facilities for nonresidential uses.

1. Off-site parking facilities shall be permitted and located within the Safe Harbor Community Center Overlay District.
2. A parking agreement shall be required in accordance with Section 114-68.

(10) *Setbacks.*

- a. *Front yard setback.* The front yard setback for any structure on each a parcel within the Safe Harbor Community Center Overlay District shall be ~~reduced to a minimum of 10 feet for a more urban look in the Safe Harbor Community Center Overlay District. Street lights and landscape lighting may be located in the front setback.~~

1. *Accessory driveways and walkways.* Accessory structures, limited to driveways and walkways, may be permitted within a required front yard setback provided they do not exceed six (6) inches in height as measured from grade. In no event shall the total combined area of all accessory structures occupy more than 60 percent of the out required front yard setback area.
2. *Outdoor Lighting.* All outdoor lighting shall comply with Chapter 114, Article VI Outdoor Lighting. Notwithstanding, streetlights and landscape lighting may be located in the front setback.
3. *Signs and landscaping.* Signs as permitted in Chapter 142 and landscaping may be permitted in a required front yard setback.
4. *Fences.* Notwithstanding the provisions of Secs. 114-13(a)(4) and 114(a)(4)c., fences of up to six (6) feet may be permitted, provided they are not located within clear sight triangles as defined in section 114-201 and/or according to FDOT and national AASHTO standards, whichever is more restrictive.

In addition, parcels of land that are developed with single family dwellings may incorporate entry features of greater than six (6) feet within fences, provided all of the following design criteria are met:

- i. The entry feature is defined as a continuous fence or gate, or combination thereof, located contiguous to and on both sides of the main access (driveway) to the property which is designed and intended to control and/or demarcate the access to the property. An

"entry feature" includes all walls, buttresses, guy wires, integral signs and decorative features attached thereto up to a maximum width of 12 feet, or 15 percent of the lot width whichever is greater, a maximum height of ten (10) feet, and four (4) feet in depth or six (6) percent of the lot depth whichever is greater as measured from the front property line; and

- ii. The entry feature shall not be located in any side yard setback required pursuant to Section 131-1; and
 - iii. The entry feature shall be compatible with the existing development in the immediate vicinity, shall be in harmony with the general appearance and character of the community, and shall not be otherwise detrimental to the public welfare; and
 - iv. The entry feature shall be designed and arranged on the site in a manner that minimizes aural and visual impact on the adjacent structures while affording the applicant a reasonable use of the land; and
 - v. The entry feature shall require a building permit for its construction and in addition to the normal building permit application requirements, the application shall include a scaled site plan and elevations for the entry feature that shows the height, width and length of each element of the entry feature applied for, including any decorative or non-functional elements; and identification of the materials composing each element of the structure (e.g. wire, stone, chain-link, wood, etc.).
- b. Shoreline Setback. ~~The shoreline setback for structures containing water-dependent principal or accessory uses within the Safe Harbor Community Center Overlay District shall be the greater of ten (10) feet or the applicable setback prescribed by Florida Department of Environmental Protection or Army Corps of Engineers regulations, whichever regulation is more restrictive, provided such uses do not involve discharge into Safe Harbor or adjacent surface waters.~~ Water-dependent principal or accessory uses within the Safe Harbor Community Center Overlay District ~~existing~~ lawfully established as of the effective date of this section may be redeveloped in their existing footprint in the event of involuntary substantial damage or destruction.

Water-dependent principal or accessory structures within the Safe Harbor Community Center Overlay District shall be setback the greater of ten (10) feet or the applicable setback prescribed by Florida Department of Environmental Protection or Army Corps of Engineers regulations, whichever regulation is more restrictive, provided such uses do not involve discharge into Safe Harbor or adjacent surface waters. Such additional uses are limited to waterfront dining areas, pedestrian walkways, public monuments or statues, informational kiosks, fuel or septic facilities, and water-dependent marina uses.

- c. Rear and side yard setbacks. Any rear and side yard setbacks within the within the Safe Harbor Community Center Overlay District shall be reduced to a minimum of 5 feet.
- (11) Outdoor Lighting. All outdoor lighting shall comply with Chapter 114, Article IV Outdoor Lighting. Notwithstanding, street lights and landscape lighting may be located in the front yard setback consistent with subsection g(2)a.
- (12) Signage. Due to the distance from US-1, ~~For~~ purposes of signage in the Safe Harbor Community Center Overlay District, ~~the number of parcels as set forth in the Monroe County, Florida Land Use District Map adopted by the Monroe County Board of Commissioners by Resolution on January 19, 1988 shall be used to determine the maximum amount of signage for a particular parcel to allow for sufficient wayfinding for persons visiting sites within the Safe Harbor Community Center Overlay District.~~ For example, if a particular parcel consisted of 5 parcels as set forth in the Land Use District Map adopted on January 19, 1988, then the maximum amount of signage for that particular parcel shall be determined as if that parcel consisted of 5 parcels. the Planning Director shall approve multiple signs on a particular parcel under this provision upon being provided good cause.
- (13) CBRS Restrictions. Notwithstanding the provisions of Chapter 138 or any other provision to the contrary, ~~sites~~ parcels within the Safe Harbor Community Center Overlay District which are designated within Coastal Barrier Resources System Unit FL 57 shall not be prohibited from serving as receiver sites for transient, market rate, and affordable dwelling units, provided the applicable site meets all other criteria established in Comprehensive Policy 101.6.8 for a receiver site. ~~and so long as no structure is developed in any portion of the parcel designated as CBRS.~~
- (14) Drones. The use of unmanned aerial vehicles and/or drones within the Safe Harbor Community Center Overlay District are prohibited.

Reason for Proposed Text Amendment

The Monroe County Year 2030 Comprehensive Plan provides for the Livable CommuniKeys Master Plan which in turn provides for the Master Plan for the Future Development of Stock Island & Key Haven, which provides for the establishment of the Safe Harbor Community Center Overlay District which is the basis of this Amendment.

Text Amendment Request

The Amendment seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the SHCC for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 15

commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC.

Policy 101.5.6

Although Section 130-140(f)(1)(b)(4) of the Amendment above permits commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area as a minor conditional use, this does not contradict Policy 101.5.6 of the Monroe County Comprehensive Plan, which provides that parcels within the Maritime Industries zoning district shall be limited to uses of less than 5,000 square feet of floor area. The specified permitted minor conditional use can only occur by consolidation of parcels as set forth above in Section 130-140(c) of the Amendment.

Parking

The parking calculations provided are based on: (1) historical parking utilization data in the SHCC; (2) the requirements of the City of Key West Land Development Regulations which contain similar parking demands for liveaboards and wet slips in urban areas; (3) as well as 15 years of data evidencing that dry slips are utilized half the time wet slips are utilized and generate approximately half the parking demand. Because of Safe Harbor's proximity to Key West, alternative modes of transportation, including bicycles and scooters, are utilized for transportation. A parking study has been submitted along with this amendment supporting the adjustments to parking contained in the Amendment.

Setback

The SHCC Overlay District will reduce the required front setback for each parcel within the SHCC Overlay District to 10 feet which will allow for a more accessible and inviting atmosphere for the buildings in the SHCC Overlay District. Further, existing water dependent principal and accessory structures will be permitted to be built back in the event of involuntary destruction due a natural disaster, fire or other issue and new water dependent uses will be situated to best take advantage of Safe Harbor. Safe Harbor Marina, Keys Fresh Seafood, 3D boatyard all have principal water dependent structures that if destroyed would not be capable of being rebuilt. This code provision protects these property owners' long term investments.

Signage

[There is a need for a change in the regulations related to SHCC Overlay District. Additionally, this permits ease of wayfinding as the SHCC Overlay District is further from US1. Further, this is in compliance with the action items adopted in the LCP.](#)

Military Installation Area of Impact

The Safe Harbor Community Center Overlay District is located in a noise zone of less than 65 DNL (Day-Night Average Sound level) noise contour pursuant to the 2013 Aircraft Noise Study

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 16

for Naval Air Station Key West, and the Safe Harbor Community Center Overlay District is compatible with the Military Installation Area of Impact (MIAI).

Density

Prior to 2017, the Land Development Code open space density was zero (0) in Maritime Industries. The Safe Harbor Community Center District Overlay provides for development at this prior level, but accounts for open space, requiring a portion of the property to be open but still allowing the same maximum net density as was provided in the land development code until its 2017 amendment.

Boat Barns/Racks

This Amendment will allow development of boat racks which are covered and enclosed (provided the same are not associated with retail sales of boats), rather than just covered, unenclosed boat racks, without requiring NROGO square footage.

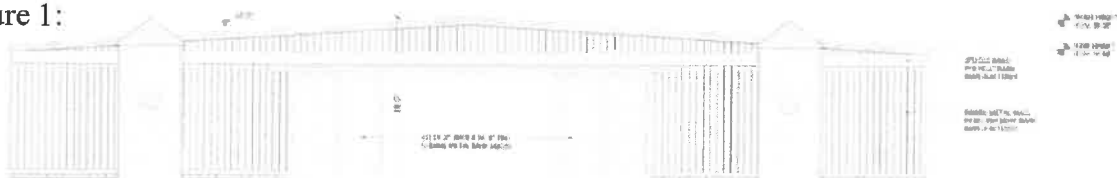
The Amendment eliminates an artificial distinction with no significance to the NROGO scheme. There is no functional or operational difference between covered, unenclosed or enclosed on three sides boat racks and covered, enclosed boat racks. However, under the current Code, a developer must obtain NROGO allocations and/or exemptions to construct an enclosed boat storage building but can build a non-enclosed (three-sided) boat storage building without the necessity of obtaining NROGO. This incentivizes development and continued use of unenclosed boat storage and discourages development and use of enclosed boat storage which is more secure from a security perspective and less susceptible to damage in a wind event such as a hurricane.

Simple physics dictates that a one, two, or three-sided building has an increased risk of sustaining damage in a wind event as opposed to a four-sided, enclosed building. Because of the lack of enclosure, wind blowing into the unenclosed structure can create a “sail” effect, stressing the structural components of the building. An enclosed building presents no such opportunity. From a practical perspective, designs of enclosed boat storage buildings which are rated for hurricane-force winds are readily available, whereas three-and-fewer sided buildings are not typically designed to withstand high-intensity winds.

There is no public policy justification for the current disparate treatment of enclosed and unenclosed boat racks. Both enclosed and unenclosed boat racks are “constructed, installed or portable, the use of which requires a location on a parcel of land,” and as such meet the Code definition of “structure.”

Figure 1, below, depicts an elevation and an aerial of an enclosed, four-sided structure intended for boat dry rack storage. Construction of this structure requires NROGO:

Figure 1:



Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

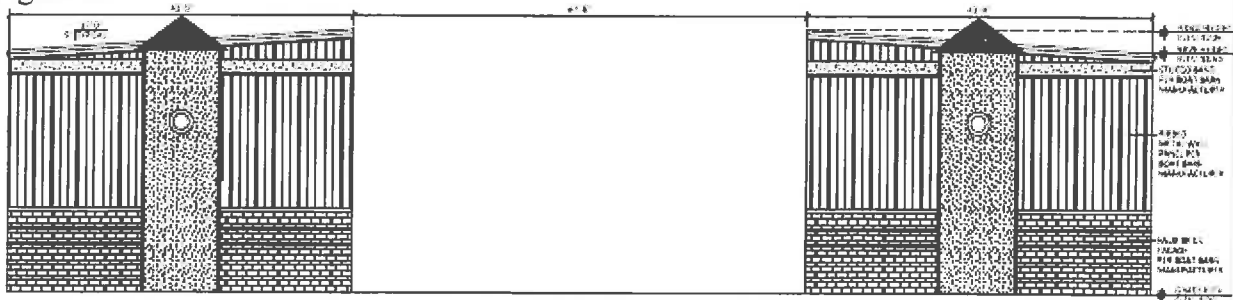
July 15, 2020

Page 17



Figure 2, below, depicts an elevation and an aerial of the same structure “cut” in half, creating two three-sided unenclosed structures. Construction of these structures for boat storage use unrelated to retail sales does not require NROGO:

Figure 2:

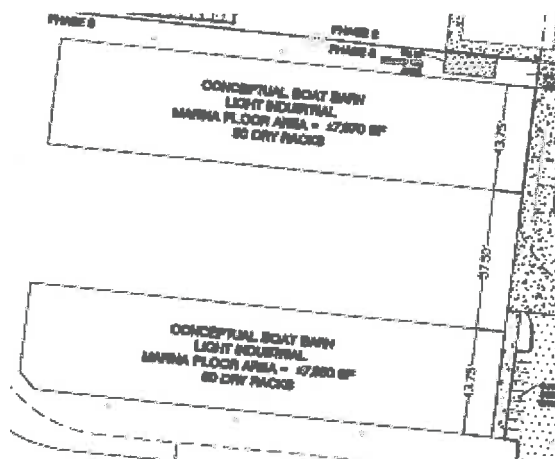


Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 18



The above Figures illustrate the absurdity of the current Code and the practical need for the Amendment. The Amendment will not change the function of the Code in any way but will allow developers and port operators to more easily and economically meet Florida Building Code requirements for boat rack structures, while decreasing the risk to boats stored inside as addressed herein.

Consistency with the Monroe County Year 2030 Comprehensive Plan, [the Stock Island-Key Haven Liveable Communikeys Plan](#), the Florida Statutes, and Principles for Guiding Development

A. The Proposed Amendment implements and is consistent with the following Goals, Objectives and Policies of the Monroe County Year 2030 Comprehensive Plan. Specifically, the amendment furthers:

Objective 101.4: Monroe County shall regulate nonresidential development to maintain a balance of land uses to serve the needs of the future population of Monroe County.

Policy 101.4.5 The NROGO allocation system shall not apply to the following nonresidential developments:

5. Industrial uses in the Maritime Industries (MI) and the Industrial (I) land use (zoning) districts.

12. Recreational and commercial working waterfront uses, as defined by §342.07, F.S., excluding transient uses. These exemptions shall not be available on lands designated as Tier I or, if clearing is proposed, designated as Tier III-A (SPA).

GOAL 217: The coastal area of Monroe County shall be managed to promote public access to the marine and coastal waters, to balance the protection of recreational and commercial working waterfront and commercial fishing uses and the preservation and protection of coastal and natural resources and the community character. [§163.3178(2)(g), F.S.]

Policy 217.1.1: The strategy to preserve and protect commercial fishing and recreational and commercial working waterfront uses shall include the following:

1. Exemptions from the requirements of the Permit Allocation System for new nonresidential development, pursuant to Policy 101.4.5;

GOAL 502: All existing and future residents and visitors of Monroe County shall be served with ports² in a manner that maximizes safety, convenience, economic benefit, environmental compatibility and consistency with other elements of the comprehensive plan.

Objective 502.1: Because of the Florida Keys' unique nature as an archipelago, Monroe County shall promote the preservation and enhancement of the existing ports and port related activities.

Policy 101.5.6: The principal purpose of the Mixed Use/Commercial (MC) future land use category is to provide for the establishment of mixed use commercial land use (zoning) districts where various types of commercial retail and office may be permitted at intensities which are consistent with the community character and the natural environment. Employee housing and commercial apartments are also permitted. In addition, Mixed Use/Commercial land use districts are to establish and conserve areas of mixed uses, which may include maritime industry, light industrial uses, commercial fishing, transient and permanent residential, institutional, public, and commercial retail uses.

This future land use category is also intended to allow for the establishment of mixed use development patterns, where appropriate. Various types of residential and nonresidential uses may be permitted; however, heavy industrial uses and similarly incompatible uses shall be prohibited. The County shall continue to take a proactive role in encouraging the preservation and enhancement of community character and recreational and commercial working waterfronts.

Policy 101.5.22: The principal purpose of the Community Center (CC) overlay is to identify a defined geographic developmental focus area according to each of the adopted Livable CommuniKeys Community Master Plans. The intent of this overlay is to implement the action items identified in the Livable CommuniKeys Community Master Plans, pursuant to Policy 101.19.2. Within three years of the adoption of the 2030 Comprehensive Plan, Monroe County shall adopt the Community Center overlays as identified by the Livable CommuniKeys Community Master Plans included in Policy 101.19.2 on the Future Land Use Map. Maximum permitted densities and intensities shall be in accordance with the underlying land use categories.

² "Port" is defined in the Comprehensive Plan as "a place alongside navigable water with facilities for the loading and unloading of vessels and cargo." Private marinas meet this definition.

GOAL 601: Monroe County shall adopt programs and policies to facilitate access by residents to adequate and affordable housing that is safe, decent, and structurally sound, and that meets the needs of the population based on type, tenure characteristics, unit size and individual preferences.

B. The Proposed Amendment implements and is consistent with the following Goals, Strategies and Action Items of the Livable CommuniKeys Program for Stock Island and Key Haven. Specifically, the amendment furthers:

Action Item 1.1.2: Amend the parking requirements in the overlay district by offering a parking credit for on-street parking spaces located directly in front of the development being served.

Action Item 1.1.3: Amend the floor area ratios in the overlay district for commercial retail and industrial uses.

Action Item 1.1.5: Create an overlay district to resolve issues with non-conforming structures and uses in the MU and MI land use districts.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density.

Strategy 1.2 Create a “downtown” district.

Action Item 1.2.1: Identify Safe Harbor as a focal point of the “downtown” district. As part of this designation, analyze the appropriate boundaries for the “downtown” district and propose revisions to the Land Development Regulations.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density

Goal One: Provide space for a working waterfront and its supporting industries.

Goal Two: Preserve commercial fishing.

Goal Three: Enhance the area’s identity as a water-oriented, commercial fishing community.

Goal Four: Revitalize the port area while improving its physical setting and appearance.

Goal Five: Promote opportunities for the diversification of the local water-dependent economy.

Goal Six: Provide and improve waterfront access.

Goal Seven: Create an efficient, visually attractive network of intra-island corridors.

C. The Proposed Amendment is consistent with Florida Statutes

There are no provisions of the Florida Statutes inconsistent with the proposed Amendment.

D. The amendment is consistent with the Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7), Florida Statutes. The Proposed Amendment specifically furthers the following Principles (Bolded):

For the purposes of reviewing the consistency of the adopted plan, or any amendments to that plan, with the principles for guiding development, and any amendments to the principles, the principles shall be construed as a whole and specific provisions may not be construed or applied in isolation from the other provisions.

(a) Strengthening local government capabilities for managing land use and development so that local government is able to achieve these objectives without continuing the area of critical state concern designation.

(b) Protecting shoreline and marine resources, including mangroves, coral reef formations, seagrass beds, wetlands, fish and wildlife, and their habitat.

(c) Protecting upland resources, tropical biological communities, freshwater wetlands, native tropical vegetation (for example, hardwood hammocks and pinelands), dune ridges and beaches, wildlife, and their habitat.

(d) Ensuring the maximum well-being of the Florida Keys and its citizens through sound economic development.

(e) Limiting the adverse impacts of development on the quality of water throughout the Florida Keys.

(f) Enhancing natural scenic resources, promoting the aesthetic benefits of the natural environment, and ensuring that development is compatible with the unique historic character of the Florida Keys.

(g) Protecting the historical heritage of the Florida Keys.

(h) Protecting the value, efficiency, cost-effectiveness, and amortized life of existing and proposed major public investments, including:

1. The Florida Keys Aqueduct and water supply facilities;
2. Sewage collection, treatment, and disposal facilities;
3. Solid waste treatment, collection, and disposal facilities;
4. Key West Naval Air Station and other military facilities;
5. Transportation facilities;
6. Federal parks, wildlife refuges, and marine sanctuaries;
7. State parks, recreation facilities, aquatic preserves, and other publicly owned properties;
8. City electric service and the Florida Keys Electric Co-op; and
9. Other utilities, as appropriate.

(i) Protecting and improving water quality by providing for the construction, operation, maintenance, and replacement of stormwater management facilities; central sewage collection; treatment and disposal facilities; and the installation and proper operation and maintenance of onsite sewage treatment and disposal systems.

(j) Ensuring the improvement of nearshore water quality by requiring the construction and operation of wastewater management facilities that meet the requirements of ss. 381.0065(4)(l) and 403.086(10), as applicable, and by directing growth to areas served by central wastewater treatment facilities through permit allocation systems.

(k) Limiting the adverse impacts of public investments on the environmental resources of the Florida Keys.

(l) Making available adequate affordable housing for all sectors of the population of the Florida Keys.

(m) Providing adequate alternatives for the protection of public safety and welfare in the event of a natural or manmade disaster and for a post disaster reconstruction plan.

(n) Protecting the public health, safety, and welfare of the citizens of the Florida Keys and maintaining the Florida Keys as a unique Florida resource.

Pursuant to Section 380.0552(7) Florida Statutes, the proposed amendment is consistent with the Principles for Guiding Development as a whole and is not inconsistent with any Principle.

Changed Projections, Assumptions and New Issues

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 23

The Board of County Commissioners may consider an amendment if the change is based on one or more factors, including changed projections (e.g. regarding public service needs) from those on which the text was based, changed assumptions (e.g. regarding demographic trends), data errors, new issues, or recognition of a need for additional detail or comprehensiveness.

The proposed Amendment is based on a need for additional detail or comprehensiveness, and the SHCC Overlay District provides a framework consistent with the Comprehensive Plan and as set forth in the Livable CommuniKeys Program for Stock Island and Key Haven.

Safe Harbor and Stock Island Marina Village

The construction of The Perry Hotel and Stock Island Marina Village have brought more tourists, visitors, and jobs to the area comprising the SHCC Overlay District. “A developing market has emerged due to Stock Island’s ability to provide world-class dockage amenities. Stock Island’s many attractive features include great restaurants, entertainment, art, and architecture, as well as beautiful golf courses, and the best year-round fishing in the U.S. There are many marinas surrounding Key West, but Stock Island Marina Village leads the industry in technology, infrastructure, and hospitality. The marina has more deepwater capacity than any other marina in the Keys, and is safely nestled within a safe harbor, providing shelter from excessive wind and seas, but maintains easy access to the open Atlantic. ... The marina — part of Stock Island’s Historic Seaport — opened its doors in the 1940s but has undergone complete redevelopment over the past four years, including the newly installed Bellingham concrete floating docks, new fuel system with 60,000 gallon capacity, 100-Room boutique style hotel, three on-site restaurants, and even more to come!” (<https://southernboating.com/destinations/us-atlantic/stock-island-marina-village-key-west-florida/>).

Ports such as the Safe Harbor Marina and Stock Island Marina Village are highly desirable destinations for boaters and fishermen from all over the world and are prime launching areas for sea travel from Florida to Cuba. “A ferry terminal for U.S.-Cuba travel, which has been a talking point for locals..., would require a marina such as Safe Harbor on Front Street or the Stock Island Marina Village on Shrimp Road, to be outfitted as an international port of entry.” *In the Shadow of Key West, Change Ahead for a Neighboring Island* (Miami Herald, August 16, 2015).

Bernstein Park

The area comprising the SHCC Overlay District is undergoing a massive amount of change, and the SHCC Overlay District is necessary to keep up with and address the changing landscape of the area. Monroe County is close to completion of the reconstruction of neighboring Bernstein Park, at a cost of approximately \$8 million, adding 2 soccer fields, a basketball court, exercise trail, a playground, and updated field lights. *This Keys Island Is Changing Right Before Our Eyes* (Miami Herald, November 27, 2016).

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 24

Boat Barn

The current Code disparately treats enclosed, four-sided boat storage racks and unenclosed, three-or-fewer sided boat storage racks with no meaningful distinction. The operational, concurrency, and environmental impacts are identical for enclosed boat racks as for three-sided, unenclosed boat racks. The text of the Amendment is consistent with the Code which encourages more sound, attractive, and practical development of boat storage racks.

The proposed Amendment is based on changed projections as to the needs of the public. As Monroe County braces itself to deal with the increasingly-evident impacts of climate change, an approach which considers and encourages best practices for storm readiness and hardening is necessary.

According to the U.S. National Climate Assessment Report, “Climate Change Impacts” (the “**NCA Report**”), produced by an advisory committee chartered under the Federal Advisory Committee Act, for the Subcommittee on Global Change Research and at the request of the U.S. Government, “[t]here has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s...[citations omitted] These include measures of intensity, frequency, and duration as well as the number of strongest (category 4 and 5) storms.” See NCA Report, P. 41. A copy of the NCA Report is attached hereto and incorporated herein as **Exhibit “B”**.

By providing for the SHCC Overlay District to accommodate enclosed boat rack structures, the Code will encourage storm-hardened and practical development of boat storage facilities. The recent wind-damage and water-damage impacts of Hurricane Irma and the projected increased intensity of Atlantic hurricanes mitigate for policies which encourage the protection of personal property (including boats) during storm events, and for investment by developers and port operators in infrastructure which provide peace of mind to visitors and tourists who may otherwise be wary to store boats in the Florida Keys for seasonal use as a result of hurricane impacts.

Furthermore, despite the best efforts of law enforcement, marine-related theft is on the rise in the Florida Keys. Pursuant to the June 21, 2017 Keynoter Article, “Marine Related Thefts on Rise Throughout the Florida Keys” (the “**Marine Theft Article**”), the theft of at least three (3) outboard engines, one (1) outboard lower unit, and three separate incidents of fishing gear theft from boats occurred over a ten-day span in June, 2017. A copy of the Marine Theft Article is attached hereto and incorporated herein as **Exhibit “C”**. One need only pick up a local newspaper any given week to find reports of the increased prevalence of marine-related theft.

The permissible development of enclosed boat racks allows developers and port operators to provide an additional option for boat storage which provides increased security to both tourist and resident boat users. It is axiomatic that an enclosed, locked boat storage structure reduces the risk of marine-related (engine and engine parts, fishing equipment, electronic equipment) theft as compared to structures where boats are visible to the naked eye. While the Marine Theft Article provides simply that “[m]ost boat, motor, and fishing and diving equipment thefts can be easily prevented with minimum effort. At the end of the day, remove your gear from the boat and lock

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 25

it up[.]” motors cannot be readily removed from boats and boats themselves are vulnerable to theft when stored anywhere other than enclosed storage under lock and key. The Amendment will encourage theft-deterrence in the marine sphere and allow port operators to more economically provide in-demand storage, explicitly furthering Goal 502 of the Comprehensive Plan that “[a]ll existing and future residents and visitors of Monroe County shall be served with ports in a manner that *maximizes safety, convenience, economic benefit*, environmental compatibility and consistency with other elements of the comprehensive plan.” (*emphasis added*).

No Adverse Community Change

There will be no adverse change to unincorporated Monroe County at large if the Amendment is approved. As discussed herein, there are no increased concurrency, environmental, or practical impacts associated with implementation of the SHCC Overlay District. All such development will be required to comply with level of service, concurrency, and performance standards as set forth in the Code. Moreover, it allows for infill at or near the primary employment center of Key West and Stock Island while keeping density outside the more rural lower Florida Keys.

Conclusion

Based on the foregoing, Applicant requests consideration and adoption of the Amendment. Thank you for your consideration and assistance, and please feel free to contact me with any questions.

Sincerely,

Chelsea C. Vanadia

CCV/BWS/kt

Enclosures

Cc (*Electronically*):

Cheryl Cioffari, Assistant Director of Planning, (Cheryl@MonroeCounty-FL.Gov)

Ilze Aguila, Sr. Planning Commission Coordinator, (Aguila-Ilze@MonroeCounty-FL.Gov)

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 26

Exhibit "A"

Monroe County Land Use Map Dated January 19, 1988

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 27

Exhibit "B"

NCA Report

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Director

RE: Third Amendment to Proposed Text Amendment (File No.: 2018-169)

July 15, 2020

Page 28

Exhibit "C"

Marine Theft Article

PREVIOUSLY PROVIDED

SMITH / HAWKS
ATTORNEYS AT LAW

COPY

RECEIVED MAR 20 2019

Barton W. Smith, Esq.
Telephone: (305) 296-7227
Facsimile: (305) 296-8448
Email: Bart@SmithHawks.com

VIA HAND DELIVERY AND EMAIL

March 18, 2019

Cheryl Cioffari, AICP, Principal Planner
Monroe County Planning & Environmental Resources Department
2798 Overseas Highway
Suite 400
Marathon, Florida 33050
Email: Cioffari-Cheryl@MonroeCounty-FL.Gov

**Re: Longstock, II, LLC – Amended Safe Harbor Community Center Overlay
File No. 2018-169**

Dear Cheryl,

Please find attached an *Amendment to Proposed Text Amendment to provide text for Section 130-140 of the Monroe County Land Development Regulations*. Generally, the proposed text amendment (“Amendment”) seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the Safe Harbor Community Center (“SHCC”) of hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC. As Such, this amendment proposes the addition of subsection (d) under the Maximum Nonresidential Land Use Intensities and District Open Space table included in *Section (3) Maximum Nonresidential Land Use Intensities and District Open Space*. The addition of the text reflects the need to preserve and promote recreational and commercial working waterfront uses, as defined by 342.07, Fl. Stat., and pursuant to Policy 101.5.6 of the Monroe County Comprehensive Code. See **Exhibit A, Amendment to Safe Harbor Community Center Overlay**.

Additionally, please find enclosed, the consent forms for the following properties that have consented to inclusion in the Safe Harbor Community Center Overlay:

RE No.:	Owner:	Address:
00123770-000000	BERNSTEIN BENJAMIN RESIDUARY TR B U/T/W	VACANT LAND
00127250-000000	BERNSTEIN BENJAMIN RESIDUARY TR B U/T/W	5700 4TH AVE
00127280-000000	BERNSTEIN BENJAMIN TRUST B	6460 FRONT ST
00127290-000000	BERNSTEIN BENJAMIN TRUST B	VACANT LAND

Cheryl Cioffari, AICP, Principal Planner

March 18, 2019

Page 2

00127380-000000	BERNSTEIN BENJAMIN TRUST B	5550 5TH AVE
00123730-000100	CONSTELLATION YACHTS INC	6811 SHRIMP RD
00123800-000101	HARBOR BAY INVESTMENTS LLC	5550 5TH AVE
00123800-000102	HARBOR BAY INVESTMENTS LLC	5550 5TH AVE 1-10
00123720-000400	JKYD LLC	VACANT LAN SHRIMP RD
00123600-000101	K W RESORT UTILITIES CORP	6630 FRONT ST
00123600-000102	KEY WEST TRANSFER STATION & HAULING SERVICE INC	6500 FRONT ST
00123540-000000	KEYS FRESH SEAFOOD LLC	6840 FRONT ST
00123761-000100	LONGSTOCK II LLC	6805 SHRIMP RD
00123761-000200	LONGSTOCK II LLC	6803 SHRIMP RD
00123761-000300	LONGSTOCK II LLC	6991 SHRIMP RD
00123761-000500	LONGSTOCK II LLC	7009 SHRIMP RD
00123761-000600	LONGSTOCK II LLC	7007 SHRIMP RD
00123761-000700	LONGSTOCK II LLC	7011 SHRIMP RD
00123761-000800	LONGSTOCK II LLC	7025 SHRIMP RD
00123761-000900	LONGSTOCK II LLC	7075 SHRIMP RD
00123761-001000	LONGSTOCK II LLC	7005 SHRIMP RD
00123762-000000	LONGSTOCK II LLC	BAY BTM OF SHRIMP RD
00123600-000100	SAFE HARBOR SEAFOOD LLC	6460 FRONT ST
00123590-000000	SAFE HARBOUR PROPERTIES LLC	6810 FRONT ST
00123761-000400	SIMV HOTEL 1 LLC	7001 SHRIMP RD

See Exhibit B, Consent Forms.

If you require anything further, or have any questions and/or concerns, please do not hesitate to contact the office.

Sincerely,


Barton W. Smith, Esq.

BWS/JMG

Enclosure

Electronic Cc: Debra Roberts, Roberts-Debra@MonroeCounty-FL.Gov
Emily Schemper, Schemper-Emily@MonroeCounty-FL.Gov

EXHIBIT A

MONROE COUNTY, FLORIDA
PLANNING AND ENVIRONMENTAL RESOURCES DEPARTMENT



AMENDED

Land Development Code (LDC) Text Amendment Application

An application must be deemed complete and in compliance with the Monroe County Comprehensive Plan and Code by the staff prior to the item being scheduled for review

Application Fee: \$5,950.00

The base fee includes two internal staff meetings with applicants; one Development Review Committee meeting, one Planning Commission public hearing; and one Board of County Commission public hearing. If this minimum number of meetings/hearings is exceeded, additional fees shall be charged pursuant to Fee Schedule Resolution and paid prior to the private application proceeding through public hearings.

In addition to the application fee, the following fees also apply:

Advertising Costs: \$245.00

Surrounding Property Owner Notification (SPON): \$3.00 for each property owner required to be noticed

Transportation Study Review: \$5,000.00 Deposit (any unused funds will be returned upon approval)

Advertising and Noticing fees for a community meeting: \$245.00 plus \$3.00/SPON

Date of Request: 03 / 18 / 2019 **(AMENDED FROM 05/19/2018 APPLICATION)**
Month Day Year

Applicant / Agent Authorized to Act for Property Owner: (Agents must provide notarized authorization from all property owners.)

SMITH HAWKS, PL

BARTON SMITH, ESQ.

Applicant (Name of Person, Business or Organization)

Name of Person Submitting this Application

138 SIMONTON STREET, KEY WEST, FL 33040

Mailing Address (Street, City, State and Zip Code)

(305) 296-7227

BART@SMITHHAWKS.COM

Work Phone

Home Phone

Cell Phone

Email Address

Property Owner: (Business/Corp must include documents showing who has legal authority to sign.)

SEE ATTACHED LIST

AGENT

(Name/Entity)

Contact Person

AGENT

Mailing Address (Street, City, State and Zip Code)

AGENT

Work Phone

Home Phone

Cell Phone

Email Address

Section(s) of Land Development Code Affected :

SECTION 139-1(a)(5)

Please describe the reason for the proposed text amendment (attach additional sheets if necessary):

SEE ATTACHED

Please describe how the proposed amendment implements and is consistent with the Comprehensive Plan:

SEE ATTACHED

Please describe how proposed amendment is consistent with the Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7), Florida Statute:

SEE ATTACHED

The Board of County Commissioners may consider an amendment if the change is based on one or more of the following factors. Please describe how one or more of the following factors shall be met (attach additional sheets if necessary):

- 1) **Changed projections (e.g. regarding public service needs) from those on which the text was based**

SEE ATTACHED

- 2) **Changed assumptions (e.g. regarding demographic trends):**

SEE ATTACHED

- 3) **Data errors, including errors in mapping, vegetative types and natural features:**

SEE ATTACHED

- 4) **New issues:**

SEE ATTACHED

- 5) **Recognition of a need for additional detail or comprehensiveness:**

SEE ATTACHED

6) **Data updates:**
SEE ATTACHED

In no event shall an amendment be approved which will result in an adverse community change of the planning area in which the proposed development is located or to any area in accordance with a Livable CommuniKeys master plan. Please describe how the text amendment would not result in an adverse community change (attach additional sheets if necessary):

SEE ATTACHED

* * * * *

Applicants submitting an application for an amendment to the text of the Land Development Code shall participate in a concept meeting with the Planning and Environmental Resources Department, as indicated in Section 102-158(d)(3), to discuss the proposed amendment.

Scheduling. A concept meeting shall be scheduled by department staff once the application is determined to be complete.

As part of this concept meeting, department staff will identify whether or not the proposed text amendment will have a county-wide impact. If the proposal is determined to have a county-wide impact, a public meeting with the Board of County Commissioners ("**Impact Meeting**") prior to the application proceeding to the DRC for review is required. The applicant shall coordinate with the Planning Director regarding the date and time of the Impact Meeting; however, all Impact Meetings shall be held in Marathon.

Notice of Meeting. The Impact Meeting shall be noticed at least 15 days prior to the meeting date by advertisement in a Monroe County newspaper of general circulation.

Noticing and Advertising Costs. The applicant shall pay the cost of the public notice and advertising for the Impact Meeting and provide proof of proper notice to the Planning Director.

The Impact Meeting is not to be a public hearing (the BOCC will not vote on the proposal), but a public meeting during which the BOCC may offer their initial opinions and the public may have input on the proposed amendment.

PROOF OF PROPER NOTICING ON THE IMPACT MEETING WILL BE REQUIRED.

Applicants requesting a Land Development Code Text Amendment shall provide for public participation through a community meeting.

Scheduling. The applicant will coordinate with the Planning Director regarding the date, time and location of the proposed community meeting; however, all meetings are to be held on a weekday evening at least three (3) months prior to any of the public hearings.

Notice of Meeting. The community meeting shall be noticed at least 15 days prior to the meeting date by advertisement in a Monroe County newspaper of general circulation, mailing of notice to surrounding property owners, and posting of the subject property.

Noticing and Advertising Costs. The applicant shall pay the cost of the public notice and advertising for the community meeting and provide proof of proper notice to the Planning Director.

The community meeting shall be facilitated by a representative from the Monroe County Planning & Environmental Resources Department and the applicant shall be present at the meeting.

PROOF OF PROPER NOTICING ON THE COMMUNITY MEETING WILL BE REQUIRED.

* * * * *

All of the following must be submitted in order to have a complete application submittal:
(Please check as you attach each required item to the application)

- ☒ Completed application form (unaltered and unbound) **PREVIOUSLY SUBMITTED**
- ☒ Correct fee (check or money order payable to *Monroe County Planning & Environmental Resources*) **PREVIOUSLY SUBMITTED**
- ☒ Existing text of Land Development Code section(s) affected **PREVIOUSLY SUBMITTED**
- ☒ Proposed amendment(s) to text of Land Development Code section(s). *Must be provided in strikethrough and underline format.* **PREVIOUSLY SUBMITTED**
- ☐ If a site specific amendment is proposed:
 - ☐ Proof of ownership (i.e., Warranty Deed)
 - ☐ Ownership Disclosure Form
 - ☐ Current Property Record Card(s) from the Monroe County Property Appraiser
 - ☐ Location map
 - ☐ Photograph(s) of site(s) from adjacent roadway(s)
 - ☐ Signed and Sealed Boundary Survey(s), prepared by a Florida registered surveyor – eight (8) sets (at a minimum, survey should include elevations; location and dimensions of all existing structures, paved areas and utility structures; all bodies of water on the site and adjacent to the site; total acreage by land use district; total acreage by habitat; and total upland area)
 - ☐ Typed name and address mailing labels of all property owners within a 600 foot radius of the property(s) – (three sets). This list should be compiled from the current tax rolls of the Monroe County Property Appraiser. In the event that a condominium development is within the 600 foot radius, each unit owner must be included

If applicable, the following must be submitted in order to have a complete application submittal:

- ☒ **Notarized Agent Authorization Letter** (note: authorization is needed from all owner(s) of the subject property) **PREVIOUSLY SUBMITTED FOR LONGSTOCK, II - REMAINDER ATTACHED**
- ☐ Proof of Ownership & Ownership Disclosure Form (*required if application affects specific and defined area*)
- ☐ Sealed Boundary Survey, prepared by a Florida registered surveyor – eight (8) sets (*required if application affects specific and defined area*)
- ☐ Location map (*required if application affects specific and defined area*)
- ☐ Copy of current Future Land Use Map (*required if application affects specific and defined area*)
- ☐ Typed name and address mailing labels of all property owners within a 600 foot radius of the property(s) – (three sets). This list should be compiled from the current tax rolls of the Monroe County Property Appraiser. In the event that a condominium development is within the 600 foot radius, each unit owner must be included (*required if application affects specific and defined area*)
- ☐ 600ft Radius report, prepared by the Monroe County Property Appraiser's Office (*required if application affects specific and defined area*)
- ☐ Traffic Study, prepared by a licensed traffic engineer (*required if application affects specific and defined area*)
- ☐ Transportation fee of \$5,000 to cover the cost of experts hired by the Department to review the traffic study – any unused funds deposited will be returned upon approval (*required if application affects specific and defined area*)

If deemed necessary to complete a full review of the application, within reason, the Planning & Environmental Resources Department reserves the right to request additional information.

Additional fees may apply pursuant to the approved fee schedule.

* * * * *

Has a previous application been submitted for this site(s) within the past two years? ☐ Yes ☒ No

Is there a pending code enforcement proceeding involving all or a portion of the parcel(s) proposed for development? ☐ Yes ☒ No Code Case file # _____ Describe the enforcement proceedings and if this application is being submitted to correct the violation: _____

The applicant/owner hereby acknowledges and agrees that any staff discussions or negotiations about conditions of approval are preliminary only, and are not final, nor are they the specific conditions or demands required to gain approval of the application, unless the conditions or demands are actually included in writing in the final development order or the final denial determination or order.

By signing this application, the owner of the subject property authorizes the Monroe County Planning & Environmental Resources staff to conduct all necessary site visits and inspections on the subject property.

I, the Applicant, certify that I am familiar with the information contained in this application, and that to the best of my knowledge such information is true, complete and accurate.

Signature of Applicant: _____

Date: MARCH 15, 2019

STATE OF FLORIDA
COUNTY OF MONROE

Sworn to and subscribed before me this 15 day of MARCH, 2019,

by BARTON W. SMITH, who is personally known to me OR
produced _____,

(PRINT NAME OF PERSON MAKING STATEMENT)

_____ as identification.
(TYPE OF ID PRODUCED)

Brandi Green
Signature of Notary Public

BRANDI GREEN

Print, Type or Stamp Commissioned Name of Notary Public

My commission expires: 06/29/2020



Send complete application package to:

Monroe County Planning & Environmental Resources Department
Marathon Government Center
2798 Overseas Highway, Suite 400
Marathon, FL 33050

PROPERTY OWNERS:

RE No.:	Owner:	Address:
00123770-000000	BERNSTEIN BENJAMIN RESIDUARY TR B U/T/W	VACANT LAND
00127250-000000	BERNSTEIN BENJAMIN RESIDUARY TR B U/T/W	5700 4TH AVE
00127280-000000	BERNSTEIN BENJAMIN TRUST B	6460 FRONT ST
00127290-000000	BERNSTEIN BENJAMIN TRUST B	VACANT LAND
00127380-000000	BERNSTEIN BENJAMIN TRUST B	5550 5TH AVE
00123730-000100	CONSTELLATION YACHTS INC	6811 SHRIMP RD
00123800-000101	HARBOR BAY INVESTMENTS LLC	5550 5TH AVE
00123800-000102	HARBOR BAY INVESTMENTS LLC	5550 5TH AVE 1-10
00123720-000400	JKYD LLC	VACANT LAN SHRIMP RD
00123600-000101	K W RESORT UTILITIES CORP	6630 FRONT ST
00123600-000102	KEY WEST TRANSFER STATION & HAULING SERVICE INC	6500 FRONT ST
00123540-000000	KEYS FRESH SEAFOOD LLC	6840 FRONT ST
00123761-000100	LONGSTOCK II LLC	6805 SHRIMP RD
00123761-000200	LONGSTOCK II LLC	6803 SHRIMP RD
00123761-000300	LONGSTOCK II LLC	6991 SHRIMP RD
00123761-000500	LONGSTOCK II LLC	7009 SHRIMP RD
00123761-000600	LONGSTOCK II LLC	7007 SHRIMP RD
00123761-000700	LONGSTOCK II LLC	7011 SHRIMP RD
00123761-000800	LONGSTOCK II LLC	7025 SHRIMP RD
00123761-000900	LONGSTOCK II LLC	7075 SHRIMP RD
00123761-001000	LONGSTOCK II LLC	7005 SHRIMP RD
00123762-000000	LONGSTOCK II LLC	BAY BTM OF SHRIMP RD
00123600-000100	SAFE HARBOR SEAFOOD LLC	6460 FRONT ST
00123590-000000	SAFE HARBOUR PROPERTIES LLC	6810 FRONT ST
00123761-000400	SIMV HOTEL 1 LLC	7001 SHRIMP RD

EXHIBIT B

WRITTEN CONSENT FORM

Date of Consent: 12 / 27 / 2018
Month Day Year

I, ROBBIES SAFE HARBOR MARINE ENT., INC. hereby consent to inclusion in the
 (Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

Lot	Block	Subdivision	Key (Island)
<u>00123660-000000</u>			<u>STOCK ISLAND</u> <u>1157775</u>
Real Estate (RE) Number			Alternate Key Number
<u>7281 SHRIMP ROAD, KEY WEST, FLORIDA 33040</u>			<u>5</u>
Street Address (Street, City, State & Zip Code)			Approximate Mile Marker

Authorized Agent Contact Information:

Mailing Address (Street)

(City, State and Zip Code)

Work Phone	Home Phone	Cell Phone	Email Address
------------	------------	------------	---------------

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: [Signature]

Printed Name of Property Owner: Rebecca Boatwright Ritter, V.P.

STATE OF FLORIDA COUNTY OF MONROE

Sworn to and subscribed before me this 27th day of DECEMBER, 2018.

by Rebecca Boatwright Ritter, who is personally known to me OR produced
 (Print Name of Person Making Statement)

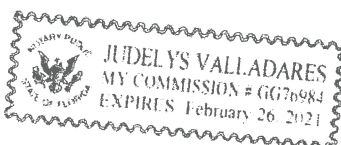
FL-DL as identification.
 (Type of ID Produced)

Signature of Notary Public

Judelys Valladares
BARTON W. SMITH
 Print, Type or Stamp Commissioned Name of Notary Public

My commission expires: 09/01/2020

Feb 26, 2021



WRITTEN CONSENT FORM

Date of Consent: 01 / 10 / 2019
Month Day Year

I, SAFE HARBOR ENTERPRISES, INC.

hereby consent to inclusion in the

(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

STOCK ISLAND

Lot Block Subdivision

00123731-000000

Key (Island)

9081090

Real Estate (RE) Number

VACANT LOT & KEY WEST, FLORIDA 33040

Alternate Key Number

5

Street Address (Street, City, State & Zip Code)

Approximate Mile Marker

Authorized Agent Contact Information:

300 SEVILLA AVE, SUITE 213

Mailing Address (Street)

CORAL GABLES, FL 33134

(City, State and Zip Code)

(305) 445-8500 ext. 201

Work Phone

Home Phone

Cell Phone

Email Address

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: [Signature]

Printed Name of Property Owner: Roger M Bernstein, President

STATE OF Florida

COUNTY OF Monroe

Sworn to and subscribed before me this 10th day of January, 2019.

by Roger M. Bernstein, who is personally known to me OR produced
(Print Name of Person Making Statement)

as identification.

(Type of ID Produced)

[Signature]
Signature of Notary Public

Print, Type or Stamp Commissioned Name of Notary Public



My commission expires:

WRITTEN CONSENT FORM

Date of Consent: 01 / 10 / 2019
Month Day Year

I, BENJAMIN BERNSTEIN RESIDUARY TR B U/T/W hereby consent to inclusion in the
(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

			STOCK ISLAND
Lot	Block	Subdivision	Key (Island)
<u>00123770-000000 & 00127250-000000</u>			<u>1157911 & 1161462</u>
Real Estate (RE) Number			Alternate Key Number
<u>VACANT LOT VACANT LOT & 5700 4TH AVENUE, KEY WEST, FLORIDA 33040</u>			<u>5</u>
Street Address (Street, City, State & Zip Code)			Approximate Mile Marker

Authorized Agent Contact Information:

300 SEVILLA AVENUE, SUITE 213

Mailing Address (Street)

CORAL GABLES, FL 33134

(City, State and Zip Code)

(305) 445-8500 ext. 201

Work Phone

Home Phone

Cell Phone

Email Address

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: 

Printed Name of Property Owner: Roger M Bernstein, Co-Trustee

STATE OF Florida

COUNTY OF Monroe

Sworn to and subscribed before me this 10th day of January, 2019.

by Roger M Bernstein, who is personally known to me OR produced
(Print Name of Person Making Statement)

as identification.

(Type of ID Produced)


Signature of Notary Public

Print, Type of Stamp Commissioned Name of Notary Public



My commission expires:

WRITTEN CONSENT FORM

Date of Consent: 01 / 10 / 2019
Month Day Year

I, JKYD, LLC

hereby consent to inclusion in the

(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

			STOCK ISLAND
Lot	Block	Subdivision	Key (Island)
0123720-000400			9088429
Real Estate (RE) Number			Alternate Key Number
VACANT LOT, KEY WEST, FLORIDA 33040			5
Street Address (Street, City, State & Zip Code)			Approximate Mile Marker

Authorized Agent Contact Information:

300 SEVILLA AVENUE, SUITE 213

Mailing Address (Street)

CORAL GABLES, FL 33134

(City, State and Zip Code)

(305) 445-8500 ext. 201

Work Phone	Home Phone	Cell Phone	Email Address
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This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: 

Printed Name of Property Owner: Roger M Bernstein, Co-Managing partner

STATE OF Florida COUNTY OF Monroe

Sworn to and subscribed before me this 10th day of January, 2019.

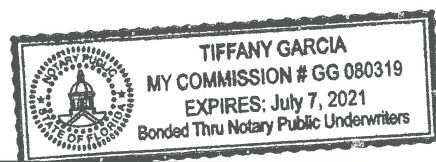
by Roger M Bernstein, who is personally known to me OR produced
(Print Name of Person Making Statement)

(Type of ID Produced)

as identification.

Signature of Notary Public

Print, Type or Stamp Commissioned Name of Notary Public



My commission expires:

WRITTEN CONSENT FORM

Date of Consent: 01 / 10 / 2019
Month Day Year

I, BENJAMIN BERNSTEIN TRUST B hereby consent to inclusion in the
(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

			STOCK ISLAND
Lot	Block	Subdivision	Key (Island)
00127280-000000 & 00127290-000000			1161497 & 1161501
Real Estate (RE) Number			Alternate Key Number
6460 FRONT STREET & VACANT LOT, KEY WEST, FLORIDA 33040			5
Street Address (Street, City, State & Zip Code)			Approximate Mile Marker

Authorized Agent Contact Information:

300 SEVILLA AVENUE, SUITE 213

Mailing Address (Street)

CORAL GABLES, FL 33134

(City, State and Zip Code)

(305) 445-8500 ext. 201

Work Phone	Home Phone	Cell Phone	Email Address
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This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: Roger M Bernstein

Printed Name of Property Owner: Roger M Bernstein, Co-Trustee

STATE OF Florida COUNTY OF Monroe

Sworn to and subscribed before me this 10th day of January, 2019.

by Roger M Bernstein, who is personally known to me OR produced
(Print Name of Person Making Statement)

Tiffany Garcia as identification.
(Type of ID Produced)

Signature of Notary Public

My commission expires:



Print, Type or Stamp Commissioned Name of Notary Public

WRITTEN CONSENT FORM

Date of Consent: 12 / 21 / 2018
Month Day Year

I, **BAMA ONE, LLC**

(Print Name of Property Owner(s))

hereby consent to inclusion in the

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

STOCK ISLAND

Lot Block Subdivision
00123570-000000

Key (Island)
1157686

Real Estate (RE) Number
VACANT LOT, KEY WEST, FLORIDA 33040

Alternate Key Number
5

Street Address (Street, City, State & Zip Code)

Approximate Mile Marker

Authorized Agent Contact Information:

Mailing Address (Street)

(City, State and Zip Code)

Work Phone

Home Phone

Cell Phone

Email Address

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: *[Signature]*

Printed Name of Property Owner: **JOSEPH O'CONNELL**

STATE OF **FLORIDA**

COUNTY OF **MONROE**

Sworn to and subscribed before me this 21st day of **DECEMBER**, 2018.

by *Joseph O'Connell*, who is personally known to me OR produced
(Print Name of Person Making Statement)

as identification.

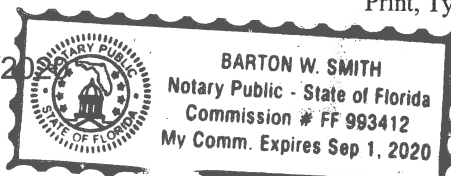
(Type of ID Produced)

Signature of Notary Public

BARTON W. SMITH

Print, Type or Stamp Commissioned Name of Notary Public

My commission expires: 09/01/2020



WRITTEN CONSENT FORM

Date of Consent:

12 / 21 / 2018
Month Day Year

I, KW RESORT UTILITIES CORP. hereby consent to inclusion in the
(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

STOCK ISLAND
Lot Block Subdivision Key (Island)
00123600-000101 8642113
Real Estate (RE) Number Alternate Key Number
6630 FRONT STREET, KEY WEST, FL 33040 5
Street Address (Street, City, State & Zip Code) Approximate Mile Marker

Authorized Agent Contact Information:

Mailing Address (Street)

(City, State and Zip Code)

Work Phone Home Phone Cell Phone Email Address

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner:

Printed Name of Property Owner:

STATE OF FLORIDA

COUNTY OF MONROE

Sworn to and subscribed before me this 21st day of DECEMBER, 2018.

by GREGORY WRIGHT, who is personally known to me OR produced
(Print Name of Person Making Statement)

as identification.

(Type of ID Produced)

Signature of Notary Public

My commission expires:

09/01/2020

BARTON W. SMITH

Print Name of Notary Public



BARTON W. SMITH
Notary Public - State of Florida
Commission # FF 993412
My Comm. Expires Sep 1, 2020

WRITTEN CONSENT FORM

Date of Consent: 12 / 21 / 2018
Month Day Year

I, SAFE HARBOUR PROPERTIES, LLC

hereby consent to inclusion in the

(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

STOCK ISLAND

Lot Block Subdivision

00123590-000000

Key (Island)

1157708

Real Estate (RE) Number

6810 FRONT STREET, KEY WEST, FLORIDA 33040

Alternate Key Number

5

Street Address (Street, City, State & Zip Code)

Approximate Mile Marker

Authorized Agent Contact Information:

Mailing Address (Street)

(City, State and Zip Code)

Work Phone

Home Phone

Cell Phone

Email Address

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: *[Signature]*

Printed Name of Property Owner: JOSEPH O'CONNELL

STATE OF FLORIDA

COUNTY OF MONROE

Sworn to and subscribed before me this 21st day of DECEMBER, 2018.

by Joseph O'Connell, who is personally known to me OR produced
(Print Name of Person Making Statement)

as identification.

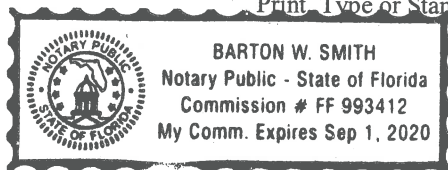
(Type of ID Produced)

Signature of Notary Public

BARTON W. SMITH

Print Type or Stamp Commissioned Name of Notary Public

My commission expires: 09/01/2020



WRITTEN NO OBJECTION FORM

Date of Consent: 1 / 10 / 19
Month Day Year

I, CONSTELLATION YACHTS, INC.

hereby do not object to inclusion in the

(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

STOCK ISLAND

Lot	Block	Subdivision	Key (Island)
00123730-000100 & 00123730-000200			9089578 & 9081548
Real Estate (RE) Number			Alternate Key Number
6811 SHRIMP ROAD & VACANT LAND, KEY WEST, FLORIDA 33040			5
Street Address (Street, City, State & Zip Code)			Approximate Mile Marker

Authorized Agent Contact Information:

Mailing Address (Street)

(City, State and Zip Code)

Work Phone Home Phone Cell Phone Email Address

Signature of Property Owner:

Printed Name of Property Owner:

Walter Schurtenberger

STATE OF

Florida

COUNTY OF

Monroe

Sworn to and subscribed before me this 10th day of JANUARY, 2019.

by Walter Schurtenberger, who is personally known to me OR produced
(Print Name of Person Making Statement)

as identification.

(Type of ID Produced)

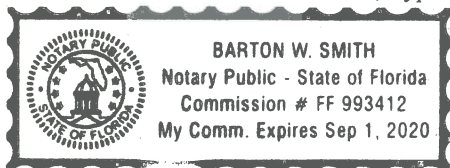
Signature of Notary Public

BARTON W. SMITH

Print, Type or Stamp Commissioned Name of Notary Public

My commission expires:

09/01/2020



WRITTEN CONSENT FORM

Date of Consent: 12 / 21 / 2018
Month Day Year

I, KEY WEST TRANSFER STATION & HAULING SERVICE, INC. hereby consent to inclusion in the
(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

			STOCK ISLAND
Lot	Block	Subdivision	Key (Island)
<u>00123600-000102</u>			<u>9084783</u>
Real Estate (RE) Number			Alternate Key Number
<u>6500 FRONT STREET, KEY WEST, FLORIDA 33040</u>			<u>5</u>
Street Address (Street, City, State & Zip Code)			Approximate Mile Marker

Authorized Agent Contact Information:

Mailing Address (Street)

(City, State and Zip Code)

Work Phone	Home Phone	Cell Phone	Email Address
------------	------------	------------	---------------

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: Irene Gonzalez

Printed Name of Property Owner: IRENE GONZALEZ

STATE OF FLORIDA COUNTY OF MONROE

Sworn to and subscribed before me this 21st day of DECEMBER, 2018.

by Irene Gonzalez, who is personally known to me OR produced
(Print Name of Person Making Statement)

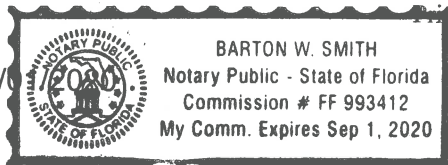
(Type of ID Produced) as identification.

Signature of Notary Public

BARTON W. SMITH

Print, Type or Stamp Commissioned Name of Notary Public

My commission expires: 09/



WRITTEN CONSENT FORM

Date of Consent: 12 / 21 / 2018
Month Day Year

I, KEYS FRESH SEAFOOD, LLC

hereby consent to inclusion in the

(Print Name of Property Owner(s))

Safe Harbor Community Center Overlay for the Property described as:

(if in metes and bounds, attach legal description on separate sheet)

Lot	Block	Subdivision	Key (Island)
<u>00123540-000000</u>			<u>1157651</u>
Real Estate (RE) Number			Alternate Key Number
<u>6840 FRONT STREET, KEY WEST, FLORIDA 33040</u>			<u>5</u>
Street Address (Street, City, State & Zip Code)			Approximate Mile Marker

Authorized Agent Contact Information:

Mailing Address (Street)

(City, State and Zip Code)

Work Phone	Home Phone	Cell Phone	Email Address
------------	------------	------------	---------------

This authorization becomes effective on the date this affidavit is notarized and shall remain in effect until terminated by the undersigned. This authorization acts as a durable power of attorney only for the purposes stated. The undersigned understands the risks and liabilities involved in the granting of this agency and accepts full responsibility for any and all of the actions of the agent named herein related to the processing of the services requested, application(s) and/or the acquisition of approvals/permits for the aforementioned applicant. The applicant(s) hereby indemnifies and holds harmless Monroe County, its officers, agents and employees for any damage to applicant caused by its agent or arising from this agency authorization.

Note: Agents must provide a notarized authorization from ALL current property owners.

Signature of Property Owner: _____

Printed Name of Property Owner: John Buckheim

STATE OF FLORIDA

COUNTY OF MONROE

Sworn to and subscribed before me this 21st day of DECEMBER, 2018.

by JOHN BUCKHEIM, who is personally known to me OR produced
(Print Name of Person Making Statement)

_____ as identification.

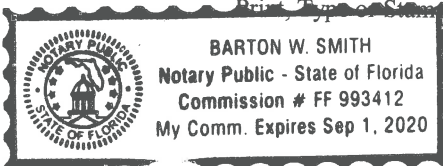
(Type of ID Produced)

Signature of Notary Public

BARTON W. SMITH

Print, Type or Stamp Commissioned Name of Notary Public

My commission expires: 09/01/2020



RECEIVED MAR 20 2019

Barton W. Smith, Esq.
Telephone: (305) 296-7227
Facsimile: (305) 296-8448
Email: Bart@SmithHawks.com

March 18, 2019

HAND DELIVERED

Emily Schemper,
Senior Director
Monroe County Planning & Environmental Resources Department
2798 Overseas Highway, Suite 400
Marathon, FL 33050

RE: **Second Amendment to Proposed Text Amendment to Provide Text for
Section 130-140 of the Monroe County Land Development Regulations
(File No. 2018-169)**

Dear Emily,

Please allow this letter to serve as a second amendment to the request for amendment to the Land Development Regulation Text Amendment Application ("**Original Application**") made on behalf of Longstock II, LLC, a Florida limited liability company ("**Applicant**"), received by Monroe County on August 15, 2018, a copy of which is attached hereto and incorporated herein as Exhibit "A" and first amended on December 10, 2018.

Original Application Background

The Original Application provided text for Section 130-140 of the Monroe County Land Development Regulations ("**Code**") which has been reserved for the Safe Harbor Community Center ("**SHCC**") Overlay District. The Original Application was submitted on the basis that the SHCC is an area poised for future development and in need of a specific overlay suitable to the particular needs and unique characteristics of the SHCC, consistent with the policies of the Monroe County Year 2030 Comprehensive Plan ("**Comp. Plan**") and the Stock Island and Key Haven Livable CommuniKeys Plan.

Generally, the proposed text amendment ("**Amendment**") seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the SHCC of hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC.

Revisions to Original Application

Since submission of the Original Application, the Applicant has become aware of additional planning considerations affecting the SHCC. Throughout the processing of the Original Application, Applicant's agents have sought input from various stakeholders within the SHCC who have significant concerns regarding the development permissible within the SHCC, particularly with regard to build-back in the event of substantial destruction of facilities which embody the character of the proposed SHCC. Specifically, various properties within the SHCC which are utilized for water-dependent uses are currently non-conforming as to setbacks and as to intensity. The proposed Amendment seeks to recognize existing non-conforming commercial intensity by allowing build-back in the event of damage/destruction, and to allow non-conforming structures to be rebuilt within their nonconforming setbacks. These changes will allow the existing character of the SHCC to continue.

Further, the Amendment seeks to recognize the character of the SHCC by allowing development of water-dependent principal and accessory uses within the shoreline setback, provided such uses do not discharge into Safe Harbor or surrounding surface waters. Any such development would be required to comply with Florida Department of Environmental Protection or Army Corps of Engineers setback regulations, whichever regulations are more stringent. The relaxation of setback restrictions for such water-dependent principal and accessory uses is consistent with the character of other wharves and working waterfront areas, where water-dependent uses in close proximity to the shoreline, adjacent to non-water dependent upland uses, comprise a crucial portion of the waterfront fabric and develop a sense of place.

Additionally, KBP Consulting Inc. has provided a parking report regarding residential and marina uses which data has been incorporated into the parking chart.

Lastly, by adoption of Comp. Plan Policy 502.1.4, Monroe County had codified its support of removal of System Unit FL 57 (which is within the proposed SHCC) from the Coastal Barrier Resources System ("CBRS") Map adopted by the Federal Coastal Barrier Improvement Act of 1990.

Currently, pursuant to Code Section 138-22(b)(6e), areas designated within the CBRS may not serve as receiver sites for transient, affordable, or market rate units. The Amendment removes this prohibition as it pertains to System Unit 57, to allow for the type of mixed-use development which typifies the SHCC. While Monroe County has to date been unsuccessful in redesignating System Unit 57 through Federal legislative action, elimination of the transfer prohibition will allow this area to function as all other areas within the SHCC, fulfilling the intent of the Amendment by fostering opportunities for responsible growth consisting of "redevelopment in a non-environmentally sensitive area of the Lower Keys for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses, and preserving and protecting coastal and natural resources and the community character."

The Amendment is as follows (additions to Amendment as initially proposed underlined in blue and deletions to Amendment as initially proposed ~~stricken in red~~):

The Proposed Amendment

Sec. 130-140. Safe Harbor Community Center Overlay District.

- (a) *Purpose and intent.* The purpose of the Safe Harbor Community Center Overlay District is to implement applicable goals, objectives, and policies of the Comprehensive Plan promoting a working waterfront and public access to the marine and coastal waters and allowing for redevelopment in a non-environmentally sensitive area of the Lower Keys for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses, and preserving and protecting coastal and natural resources and the community character. The intent is to protect and maintain the character of the Safe Harbor area while allowing redevelopment/infill within the overlay district, an area that is the result of dredge and fill which has been developed with nonresidential uses.
- (b) *Boundary.* The Safe Harbor Community Center Overlay District shall be shown as an overlay district on the Official Land Use District Map. The Safe Harbor Community Center Overlay District shall be comprised of that certain area bounded by Front Street to the east, Fourth Avenue to the north, Fifth Avenue to the north, Shrimp Road to the west, and Shrimp Road to the south but excluding that certain property owned by the Utility Board of the City of Key West and Florida Keys Aqueduct Authority bounded by Front Street to the east.
- (c) Pursuant to Monroe County Comprehensive Plan Policy 101.5.6, the limitation of 5,000 square feet of floor area for commercial retail, restaurant uses, or any combination thereof shall apply to parcels as they existed as of the date of adoption of the Land Development Regulations in 1986 and as identified in the Monroe County Land Use Map dated January 19, 1988 attached hereto as **Exhibit "A"**.
- (d) Notwithstanding any provision to the contrary, non-residential structures which are non-conforming as to intensity within the Safe Harbor Community Center Overlay District as of the effective date of this section may be redeveloped up to their existing square footage in the event of involuntary substantial damage or destruction.
- (e) NROGO allocations or transfers over 10,000 square feet shall be permitted into the Safe Harbor Community Center Overlay District.
- (f) Within the boundaries of the Safe Harbor Community Center Overlay District, the permitted and conditional uses in subsections (1)(b) and (c) shall be enforced, in lieu of Section 130-85, Maritime Industries, and Section 130-88, Mixed Use; the maximum hotel/motel density in subsection (2) shall be enforced in lieu of Section 130-162; and the nonresidential land use

intensities in subsection (3) shall be enforced in lieu of Section 130-164, maximum nonresidential land use intensities and district open space.

(1) *Permitted uses.* Safe Harbor Community Center Overlay District Permitted Uses

A. The following uses are permitted as of right in the Safe Harbor Community Center Overlay District:

1. Light industrial uses;
2. Commercial retail, restaurant uses, or any combination thereof, of less than 5,000 square feet of floor area;
3. Institutional residential uses, involving less than ten dwelling units or rooms;
4. Office uses of less than 5,000 square feet of floor area;
5. Continuation of existing heavy industrial uses;
6. Detached dwellings;
7. Commercial apartments involving less than six dwelling units, but tourist housing uses, vacation rental use, of commercial apartments is prohibited.
8. Attached and detached dwellings involving less than six units, designated as employee housing as provided for in Section 139-1;
9. Commercial fishing;
10. Institutional uses;
11. Public buildings and uses;
12. Replacement of an existing antenna-supporting structure pursuant to Section 146-5(b);
13. Collocations on existing antenna-supporting structures, pursuant to Section 146-5(c);
14. Attached wireless communications facilities, as accessory uses, pursuant to section 146-5(d);
15. Stealth wireless communications facilities, as accessory uses, pursuant to section 146-5(e); and
16. Satellite earth stations, as accessory uses, pursuant to section 146-5(f);
17. Wastewater nutrient reduction cluster systems that serve less than ten residences.

B. The following uses are permitted as minor conditional uses in the Safe Harbor Community Center Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:

1. Commercial apartments involving more than six dwelling units, provided that:
 - a. The hours of operation of the commercial uses proposed in conjunction with the apartments are compatible with residential uses;
 - b. Access to U.S. 1 is by way of:
 1. An existing curb cut;
 2. A signalized intersection; or

3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 - c. Tourist housing uses, including vacation rental use of commercial apartments is prohibited;
2. Hotels of fewer than 50 rooms, provided that one or more of the following amenities is available to guests:
 - a. Swimming pool;
 - b. Docking Facilities; or
 - c. Tennis courts;
3. New antenna-supporting structures, pursuant to Section 146-5(a).
4. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
5. Commercial retail, office, restaurant uses, or any combination thereof, of high intensity, and of less than 5,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
6. Commercial apartments involving six to 18 dwelling units, provided that:
 - a. The hours of operation of the commercial uses are compatible with residential uses;
 - b. Access to U.S. 1 is by way of:
 1. An existing curb cut;
 2. A signalized intersection; or
 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 - c. Tourist housing uses, including vacation rental uses, of commercial apartments are prohibited;

7. Attached and detached dwellings involving six to 18 units, designated as employee housing as provided for in Section 139-1.
- C. The following uses are permitted as major conditional uses in the Safe Harbor Community Center Overlay District, subject to the standards and procedures set forth in Chapter 110, Article III:
 1. Commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, of greater than 10,000 square feet of floor area, provided that access to U.S. 1 is by way of:
 - a. An existing curb cut;
 - b. A signalized intersection; or
 - c. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 2. Hotels providing 50 or more rooms, provided that:
 - a. The hotel has restaurant facilities on the premises; and
 - b. One or more of the following amenities is available to guests:
 1. Swimming pool; or
 2. Docking facilities; or
 3. Tennis courts; and
 - c. Access to U.S. 1 is by way of:
 1. An existing curb cut;
 2. A signalized intersection; or
 3. A curb cut that is separated from any other curb cut on the same side of U.S. 1 by at least 400 feet;
 3. Marinas, provided that:
 - a. The parcel proposed for development has access to water at least four feet below mean sea level at mean low tide;
 - b. The sale of goods and services is limited to fuel, food, boating, diving and sport fishing products;
 - c. All outside storage areas are screened from adjacent uses by a solid fence, wall, or hedge at least six feet in height; and
 - d. Each nonwaterside perimeter setback of the parcel proposed for development must have a class C bufferyard within a side yard setback of no less than ten feet;

4. Wastewater treatment facilities and wastewater treatment collection systems serving uses located in any land use district, provided that:
 - a. The wastewater treatment facility and wastewater treatment collection systems are in compliance with all federal, state, and local requirements;
 - b. The wastewater treatment facility, wastewater treatment collection systems and accessory uses shall be screened by structures designed to be architecturally consistent with the character of the surrounding community and minimize the impact of any outdoor storage, temporary or permanent; and
 - c. In addition to any district boundary buffers set forth in Chapter 114, Article V, a planting bed, eight feet in width, to be measured perpendicular to the exterior of the screening structure shall be established with the following:
 1. One native canopy tree for every 25 linear feet of screening structure;
 2. One understory tree for every ten linear feet of screening structure and the required trees shall be evenly distributed throughout the planting bed;
 3. The planting bed shall be installed as set forth in Chapter 114, Article IV; and
 4. A solid fence may be required upon determination by the planning director.
 5. Heliports or seaplane ports, provided that:
 - a. The heliport is associated with a governmental service facility, a law enforcement element or a medical services facility;
 - b. The heliport or seaplane port is a Federal Aviation Administration certified landing facility;
 - c. The landing and departure approaches do not pass over established residential uses or known bird rookeries;
 - d. If there are established residential uses within 500 feet of the parcel proposed for development, the hours of operation for non-emergency aircraft shall be limited to daylight; and
 - e. The use is fenced or otherwise secured from entry by unauthorized persons;
 6. Attached and detached dwelling units involving more than 18 units, designated as employee housing as provided for in Section 139-1.
- (2) *Maximum Densities for Hotel/Motel and Minimum Open Space.* For purposes of this overlay district, the hotel/motel maximum net density shall be 20 units per acre and minimum open space shall be 0.20.
- (3) *Maximum Nonresidential Land Use Intensities and District Open Space.* For the purposes of this overlay district, uses with corresponding intensity thresholds shall be cumulative and utilize the floor area ratios as follows:

Safe Harbor Community Center Overlay District Maximum Nonresidential Land Use Intensities and District Open Space:

Land Use	Maximum Floor Area Ratio	Minimum Open Space Ratio^(a)
Low Intensity Commercial Retail or Restaurant	0.40	0.20
Medium Intensity Commercial Retail or Restaurant	0.30	0.20
High Intensity Commercial Retail or Restaurant	0.30	0.20
Office	0.50	0.20
Commercial Fishing	0.45	0.20
Light Industrial	0.60 ^(b)	0.20
Heavy Industrial	0.40	0.20
Institutional	0.30	0.20
Public Building/Uses	0.60	0.20
Agriculture (Mariculture)	0.45	0.20
Commercial Recreation	0.25	0.20
<p>(a) Additional open space requirements may apply based on environmental protection criteria – see additional open space ratios in Chapter 118. In accordance with Section 101-2(1), the most restrictive of these ratios applies.</p> <p>(b) For properties within the Safe Harbor Community Center Overlay District with Light Industrial land use, the maximum floor area ratio shall be 0.60 in accordance with Policy 101.5.25 of the Comprehensive Plan.</p> <p>(c) Enclosed and partially enclosed boat barns shall not count towards Floor Area Ratio within the Safe Harbor Community Center Overlay District.</p> <p>(d) In order to preserve and promote recreational and commercial working waterfront uses, as defined by 342.07, F.S., pursuant to Policy 101.5.6., the following criteria shall apply to all lands designated with the Maritime Industries (MI) land use (zoning) district within this land use category:</p> <ol style="list-style-type: none"> 1. When a mixture of uses is proposed for parcels designated as MI land use (zoning) district, working waterfront and water dependent uses, such as marina, fish house market, boat repair, boat building, boat storage, or other similar uses but excluding transient uses, shall be preserved by maintaining a minimum of 35% of the upland area of the property for those uses. To incentivize additional preservation of recreational and commercial working waterfront uses, the following shall be available: <ol style="list-style-type: none"> i. For the preservation of 36-50% of the upland area of property for working waterfront and water dependent uses, up to 20,000 sf ft. of nonresidential floor area from the NROGO bank shall be provided to the property; and ii. For the preservation of 50% or more of the upland area of property for working waterfront and water dependent uses, the residential density on the property may be developed pursuant to the maximum net density standard without the use of TDRs. 		

(g) *Parking.*

- (1) *Required number of off-street parking spaces.* The following number of parking spaces shall be provided for each use¹:

Specific Use Category	Minimum Required Number of Parking Spaces Per Indicated Unit of Measure
Single-family dwelling units, including mobile homes on individual lots or parcels	2.0 spaces per dwelling unit or mobile home
Multifamily residential developments	1.5 spaces per dwelling unit
Commercial retail except as otherwise specified in this table	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building and 1.5 spaces per 1,000 sq. ft. of area devoted to outdoor retail sales
Eating and drinking establishments, such as restaurants and bars	For areas devoted to food/beverage service, 1.0 space per 3 seats or 3.0 spaces per 1,000 sq. ft. of nonresidential floor area, whichever total amount is higher. For other areas, 3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building separate from the seating area and devoted to activities other than food/beverage service (including, but not limited to, kitchen, office, retail sales not related to food or beverage and storage)
Commercial recreation (indoor), excluding theaters, conference centers and activity centers	5.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Commercial recreation (outdoor)	5.0 spaces per 1,000 sq. ft. of the parcel that is directly devoted to the outdoor recreational activity, excluding areas used for parking and driveways, required yards and required landscaping and buffer areas
Theaters, conference centers, or activity centers	1.0 space per 3.0 actual seats or based on seating capacity
Offices	3.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building
Hotels/destination resorts	1.0 space per each 1-bedroom transient dwelling unit and 1.0 space plus 0.5 space for each additional bedroom per each 2 or more bedroom transient dwelling unit

¹ This subsection shall replace subsection 114-67©. All other provisions of Sec. 114-67 shall apply as provided in the Code.

Industrial uses; excluding mini-warehouses/self-storage centers; repair or servicing of vehicles; and warehousing	2.0 spaces per 1,000 sq. ft. of nonresidential floor area within the building; and 1.0 space per 1,000 sq. ft. of the parcel that is devoted to outdoor industrial use
Live-aboard	1.0 space per berth
Marinas and commercial fishing facilities	1.0 space per 2 berths plus 1.0 space per 4 dry storage racks
Charter/guide boats, six or fewer passenger capacity	1.0 space per berth
Party and charter/guide boats, more than six passengers capacity	0.3 space per passenger capacity of vessel
Boat ramps	6.0 spaces per ramp; all spaces shall be a minimum of 14 feet by 55 feet, to accommodate trailers and oversized vehicles

(2) *Off-site parking facilities.* The following requirements shall apply to off-site parking facilities for nonresidential uses.

1. Off-site parking facilities shall be permitted and located within the Safe Harbor Community Center Overlay District.
2. A parking agreement shall be required in accordance with Section 114-68.

(h) *Setback.*

- a. The front setback for each parcel within the Safe Harbor Community Center Overlay District shall be reduced to 10 feet for a more urban look in the Safe Harbor Community Center Overlay District. Street lights and landscape lighting may be located in the front setback.
- b. The shoreline setback for structures containing water-dependent principal or accessory uses within the Safe Harbor Community Center Overlay District shall be the greater of ten (10) feet or the applicable setback prescribed by Florida Department of Environmental Protection or Army Corps of Engineers regulations, whichever regulation is more restrictive, provided such uses do not involve discharge into Safe Harbor or adjacent surface waters. Water-dependent principal or accessory uses within the Safe Harbor Community Center Overlay District existing as of the effective date of this section may be redeveloped in their existing footprint in the event of involuntary substantial damage or destruction.

(i) *Signage.* For purposes of signage in the Safe Harbor Community Center Overlay District, the number of parcels as set forth in the Monroe County, Florida Land Use District Map adopted by the Monroe County Board of Commissioners by Resolution on January 19, 1988 shall be used to determine the maximum amount of signage for a particular parcel. For example, if a particular parcel consisted of 5 parcels as set forth in the Land Use District Map adopted on

January 19, 1988, then the maximum amount of signage for that particular parcel shall be determined as if that parcel consisted of 5 parcels.

- (j) *CBRS Restrictions.* Notwithstanding the provisions of Chapter 138 or any other provision to the contrary, sites within the Safe Harbor Community Center Overlay District which are designated within Coastal Barrier Resources System Unit FL 57 shall not be prohibited from serving as receiver sites for transient, market rate, and affordable dwelling units, provided the applicable site meets all other criteria for a receiver site.

Reason for Proposed Text Amendment

The Monroe County Year 2030 Comprehensive Plan provides for the Livable Communities Master Plan which in turn provides for the Master Plan for the Future Development of Stock Island & Key Haven, which provides for the establishment of the Safe Harbor Community Center Overlay District which is the basis of this Amendment.

Text Amendment Request

The Amendment seeks to promote a working waterfront and public access to the marine and coastal waters and allows for redevelopment in the SHCC for hotels/motels, affordable/workforce housing, commercial retail, and restaurant uses while balancing the protection of recreational and commercial working waterfront and commercial fishing uses and preserving and protecting coastal and natural resources and the community character of the SHCC.

Policy 101.5.6

Although Section 130-140(f)(1)(b)(4) of the Amendment above permits commercial retail, office, restaurant uses, or any combination thereof, of low and medium intensity, and of greater than 5,000 but less than 10,000 square feet or floor area as a minor conditional use, this does not contradict Policy 101.5.6 of the Monroe County Comprehensive Plan, which provides that parcels within the Maritime Industries zoning district shall be limited to uses of less than 5,000 square feet of floor area. The specified permitted minor conditional use can only occur by consolidation of parcels as set forth above in Section 130-140(c) of the Amendment.

Parking

The parking calculations provided are based on: (1) historical parking utilization data in the SHCC; (2) the requirements of the City of Key West Land Development Regulations which contain similar parking demands for liveaboards and wet slips in urban areas; (3) as well as 15 years of data evidencing that dry slips are utilized half the time wet slips are utilized and generate approximately half the parking demand. Because of Safe Harbor's proximity to Key West, alternative modes of transportation, including bicycles and scooters, are utilized for transportation. A parking study has been submitted along with this amendment supporting the adjustments to parking contained in the Amendment.

Setback

The SHCC Overlay District will reduce the required front setback for each parcel within the SHCC Overlay District to 10 feet which will allow for a more accessible and inviting atmosphere for the buildings in the SHCC Overlay District. Further, existing water dependent principal and accessory structures will be permitted to be built back in the event of involuntary destruction due a natural disaster, fire or other issue and new water dependent uses will be situated to best take advantage of Safe Harbor. Safe Harbor Marina, Keys Fresh Seafood, 3D boatyard all have principal water dependent structures that if destroyed would not be capable of being rebuilt. This code provision protects these property owners' long term investments.

Signage

The SHCC Overlay District will solve the problem regarding the need for signage variances for large parcels such as the Perry Hotel, which formerly consisted of multiple smaller parcels. This is achieved by utilizing the number of parcels as per the Land Use District Map adopted by the Monroe County Board of Commissioners by Resolution on January 19, 1988.

Military Installation Area of Impact

The Safe Harbor Community Center Overlay District is located in a noise zone of less than 65 DNL (Day-Night Average Sound level) noise contour pursuant to the 2013 Aircraft Noise Study for Naval Air Station Key West, and the Safe Harbor Community Center Overlay District is compatible with the Military Installation Area of Impact (MIAI).

Density

Prior to 2017, the Land Development Code open space density was zero (0) in Maritime Industries. The Safe Harbor Community Center District Overlay provides for development at this prior level, but accounts for open space, requiring a portion of the property to be open but still allowing the same maximum net density as was provided in the land development code until its 2017 amendment.

Boat Barns/Racks

This Amendment will allow development of boat racks which are covered and enclosed (provided the same are not associated with retail sales of boats), rather than just covered, unenclosed boat racks, without requiring NROGO square footage.

The Amendment eliminates an artificial distinction with no significance to the NROGO scheme. There is no functional or operational difference between covered, unenclosed or enclosed on three sides boat racks and covered, enclosed boat racks. However, under the current Code, a developer must obtain NROGO allocations and/or exemptions to construct an enclosed boat storage building but can build a non-enclosed (three-sided) boat storage building without the necessity of obtaining NROGO. This incentivizes development and continued use of unenclosed boat storage and

discourages development and use of enclosed boat storage which is more secure from a security perspective and less susceptible to damage in a wind event such as a hurricane.

Simple physics dictates that a one, two, or three-sided building has an increased risk of sustaining damage in a wind event as opposed to a four-sided, enclosed building. Because of the lack of enclosure, wind blowing into the unenclosed structure can create a “sail” effect, stressing the structural components of the building. An enclosed building presents no such opportunity. From a practical perspective, designs of enclosed boat storage buildings which are rated for hurricane-force winds are readily available, whereas three-and-fewer sided buildings are not typically designed to withstand high-intensity winds.

There is no public policy justification for the current disparate treatment of enclosed and unenclosed boat racks. Both enclosed and unenclosed boat racks are “constructed, installed or portable, the use of which requires a location on a parcel of land,” and as such meet the Code definition of “structure.”

Figure 1, below, depicts an elevation and an aerial of an enclosed, four-sided structure intended for boat dry rack storage. Construction of this structure requires NROGO:

Figure 1:

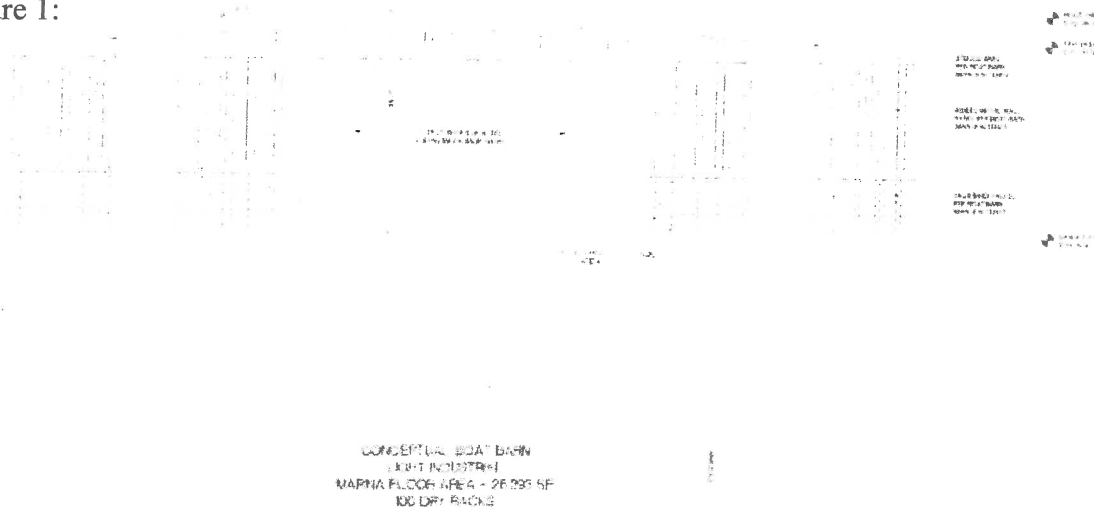
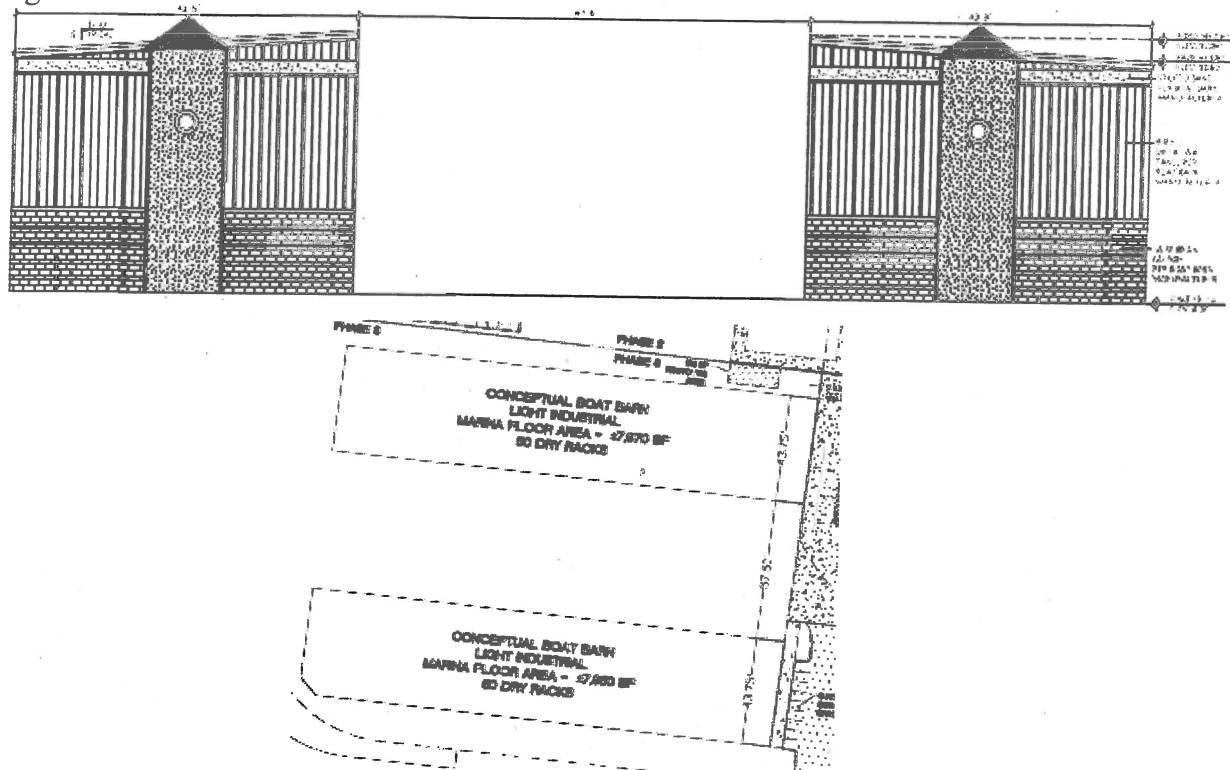


Figure 2, below, depicts an elevation and an aerial of the same structure “cut” in half, creating two three-sided unenclosed structures. Construction of these structures for boat storage use unrelated to retail sales does not require NROGO:

Figure 2:



The above Figures illustrate the absurdity of the current Code and the practical need for the Amendment. The Amendment will not change the function of the Code in any way but will allow developers and port operators to more easily and economically meet Florida Building Code requirements for boat rack structures, while decreasing the risk to boats stored inside as addressed herein.

Consistency with the Monroe County Year 2030 Comprehensive Plan, the Florida Statutes, and Principles for Guiding Development

- A. The Proposed Amendment implements and is consistent with the following Goals, Objectives and Policies of the Monroe County Year 2030 Comprehensive Plan. Specifically, the amendment furthers:**

Objective 101.4: Monroe County shall regulate nonresidential development to maintain a balance of land uses to serve the needs of the future population of Monroe County.

Policy 101.4.5 The NROGO allocation system shall not apply to the following nonresidential developments:

5. Industrial uses in the Maritime Industries (MI) and the Industrial (I) land use (zoning) districts.

12. Recreational and commercial working waterfront uses, as defined by §342.07, F.S., excluding transient uses. These exemptions shall not be available on lands designated as Tier I or, if clearing is proposed, designated as Tier III-A (SPA).

GOAL 217: The coastal area of Monroe County shall be managed to promote public access to the marine and coastal waters, to balance the protection of recreational and commercial working waterfront and commercial fishing uses and the preservation and protection of coastal and natural resources and the community character. [§163.3178(2)(g), F.S.]

Policy 217.1.1: The strategy to preserve and protect commercial fishing and recreational and commercial working waterfront uses shall include the following:

1. Exemptions from the requirements of the Permit Allocation System for new nonresidential development, pursuant to Policy 101.4.5;

GOAL 502: All existing and future residents and visitors of Monroe County shall be served with ports² in a manner that maximizes safety, convenience, economic benefit, environmental compatibility and consistency with other elements of the comprehensive plan.

Objective 502.1: Because of the Florida Keys' unique nature as an archipelago, Monroe County shall promote the preservation and enhancement of the existing ports and port related activities.

Policy 101.5.6: The principal purpose of the Mixed Use/Commercial (MC) future land use category is to provide for the establishment of mixed use commercial land use (zoning) districts where various types of commercial retail and office may be permitted at intensities which are consistent with the community character and the natural environment. Employee housing and commercial apartments are also permitted. In addition, Mixed Use/Commercial land use districts are to establish and conserve areas of mixed uses, which may include maritime industry, light industrial uses, commercial fishing, transient and permanent residential, institutional, public, and commercial retail uses.

This future land use category is also intended to allow for the establishment of mixed use development patterns, where appropriate. Various types of residential and nonresidential uses may be permitted; however, heavy industrial uses and similarly incompatible uses shall be prohibited. The County shall continue to take a proactive role in encouraging the preservation and enhancement of community character and recreational and commercial working waterfronts.

² "Port" is defined in the Comprehensive Plan as "a place alongside navigable water with facilities for the loading and unloading of vessels and cargo." Private marinas meet this definition.

Policy 101.5.22: The principal purpose of the Community Center (CC) overlay is to identify a defined geographic developmental focus area according to each of the adopted Livable CommuniKeys Community Master Plans. The intent of this overlay is to implement the action items identified in the Livable CommuniKeys Community Master Plans, pursuant to Policy 101.19.2. Within three years of the adoption of the 2030 Comprehensive Plan, Monroe County shall adopt the Community Center overlays as identified by the Livable CommuniKeys Community Master Plans included in Policy 101.19.2 on the Future Land Use Map. Maximum permitted densities and intensities shall be in accordance with the underlying land use categories.

GOAL 601: Monroe County shall adopt programs and policies to facilitate access by residents to adequate and affordable housing that is safe, decent, and structurally sound, and that meets the needs of the population based on type, tenure characteristics, unit size and individual preferences.

B. The Proposed Amendment implements and is consistent with the following Goals, Strategies and Action Items of the Livable CommuniKeys Program for Stock Island and Key Haven. Specifically, the amendment furthers:

Action Item 1.1.2: Amend the parking requirements in the overlay district by offering a parking credit for on-street parking spaces located directly in front of the development being served.

Action Item 1.1.3: Amend the floor area ratios in the overlay district for commercial retail and industrial uses.

Action Item 1.1.5: Create an overlay district to resolve issues with non-conforming structures and uses in the MU and MI land use districts.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density.

Strategy 1.2 Create a “downtown” district.

Action Item 1.2.1: Identify Safe Harbor as a focal point of the “downtown” district. As part of this designation, analyze the appropriate boundaries for the “downtown” district and propose revisions to the Land Development Regulations.

Action Item 1.2.2: Allow the existing nonconforming commercial uses in the “downtown” overlay district to maintain their current density if workforce/affordable housing is provided above the commercial use. The workforce housing shall be calculated based on zero density

Goal One: Provide space for a working waterfront and its supporting industries.

Goal Two: Preserve commercial fishing.

Goal Three: Enhance the area's identity as a water-oriented, commercial fishing community.

Goal Four: Revitalize the port area while improving its physical setting and appearance.

Goal Five: Promote opportunities for the diversification of the local water-dependent economy.

Goal Six: Provide and improve waterfront access.

Goal Seven: Create an efficient, visually attractive network of intra-island corridors.

C. The Proposed Amendment is consistent with Florida Statutes

There are no provisions of the Florida Statutes inconsistent with the proposed Amendment.

D. The amendment is consistent with the Principles for Guiding Development for the Florida Keys Area, Section 380.0552(7), Florida Statutes. The Proposed Amendment specifically furthers the following Principles (Bolded):

For the purposes of reviewing the consistency of the adopted plan, or any amendments to that plan, with the principles for guiding development, and any amendments to the principles, the principles shall be construed as a whole and specific provisions may not be construed or applied in isolation from the other provisions.

(a) Strengthening local government capabilities for managing land use and development so that local government is able to achieve these objectives without continuing the area of critical state concern designation.

(b) Protecting shoreline and marine resources, including mangroves, coral reef formations, seagrass beds, wetlands, fish and wildlife, and their habitat.

(c) Protecting upland resources, tropical biological communities, freshwater wetlands, native tropical vegetation (for example, hardwood hammocks and pinelands), dune ridges and beaches, wildlife, and their habitat.

(d) Ensuring the maximum well-being of the Florida Keys and its citizens through sound economic development.

- (e) Limiting the adverse impacts of development on the quality of water throughout the Florida Keys.
- (f) Enhancing natural scenic resources, promoting the aesthetic benefits of the natural environment, and ensuring that development is compatible with the unique historic character of the Florida Keys.
- (g) Protecting the historical heritage of the Florida Keys.
- (h) Protecting the value, efficiency, cost-effectiveness, and amortized life of existing and proposed major public investments, including:
 - 1. The Florida Keys Aqueduct and water supply facilities;
 - 2. Sewage collection, treatment, and disposal facilities;
 - 3. Solid waste treatment, collection, and disposal facilities;
 - 4. Key West Naval Air Station and other military facilities;
 - 5. Transportation facilities;
 - 6. Federal parks, wildlife refuges, and marine sanctuaries;
 - 7. State parks, recreation facilities, aquatic preserves, and other publicly owned properties;
 - 8. City electric service and the Florida Keys Electric Co-op; and
 - 9. Other utilities, as appropriate.
- (i) Protecting and improving water quality by providing for the construction, operation, maintenance, and replacement of stormwater management facilities; central sewage collection; treatment and disposal facilities; and the installation and proper operation and maintenance of onsite sewage treatment and disposal systems.
- (j) Ensuring the improvement of nearshore water quality by requiring the construction and operation of wastewater management facilities that meet the requirements of ss. 381.0065(4)(l) and 403.086(10), as applicable, and by directing growth to areas served by central wastewater treatment facilities through permit allocation systems.
- (k) Limiting the adverse impacts of public investments on the environmental resources of the Florida Keys.
- (l) Making available adequate affordable housing for all sectors of the population of the Florida Keys.
- (m) Providing adequate alternatives for the protection of public safety and welfare in the event of a natural or manmade disaster and for a post disaster reconstruction plan.**

(n) Protecting the public health, safety, and welfare of the citizens of the Florida Keys and maintaining the Florida Keys as a unique Florida resource.

Pursuant to Section 380.0552(7) Florida Statutes, the proposed amendment is consistent with the Principles for Guiding Development as a whole and is not inconsistent with any Principle.

Changed Projections, Assumptions and New Issues

The Board of County Commissioners may consider an amendment if the change is based on one or more factors, including changed projections (e.g. regarding public service needs) from those on which the text was based, changed assumptions (e.g. regarding demographic trends), data errors, new issues, or recognition of a need for additional detail or comprehensiveness.

The proposed Amendment is based on a need for additional detail or comprehensiveness, and the SHCC Overlay District provides a framework consistent with the Comprehensive Plan and as set forth in the Livable CommuniKeys Program for Stock Island and Key Haven.

Safe Harbor and Stock Island Marina Village

The construction of The Perry Hotel and Stock Island Marina Village have brought more tourists, visitors, and jobs to the area comprising the SHCC Overlay District. “A developing market has emerged due to Stock Island’s ability to provide world-class dockage amenities. Stock Island’s many attractive features include great restaurants, entertainment, art, and architecture, as well as beautiful golf courses, and the best year-round fishing in the U.S. There are many marinas surrounding Key West, but Stock Island Marina Village leads the industry in technology, infrastructure, and hospitality. The marina has more deepwater capacity than any other marina in the Keys, and is safely nestled within a safe harbor, providing shelter from excessive wind and seas, but maintains easy access to the open Atlantic. ... The marina — part of Stock Island’s Historic Seaport — opened its doors in the 1940s but has undergone complete redevelopment over the past four years, including the newly installed Bellingham concrete floating docks, new fuel system with 60,000 gallon capacity, 100-Room boutique style hotel, three on-site restaurants, and even more to come!” (<https://southernboating.com/destinations/us-atlantic/stock-island-marina-village-key-west-florida/>).

Ports such as the Safe Harbor Marina and Stock Island Marina Village are highly desirable destinations for boaters and fishermen from all over the world and are prime launching areas for sea travel from Florida to Cuba. “A ferry terminal for U.S.-Cuba travel, which has been a talking point for locals..., would require a marina such as Safe Harbor on Front Street or the Stock Island Marina Village on Shrimp Road, to be outfitted as an international port of entry.” *In the Shadow of Key West, Change Ahead for a Neighboring Island* (Miami Herald, August 16, 2015).

Ms. Emily Schemper, Assistant Director

RE: Second Amendment to Proposed Text Amendment (File No.: 2018-169)

March 18, 2019

Page 20

Bernstein Park

The area comprising the SHCC Overlay District is undergoing a massive amount of change, and the SHCC Overlay District is necessary to keep up with and address the changing landscape of the area. Monroe County is close to completion of the reconstruction of neighboring Bernstein Park, at a cost of approximately \$8 million, adding 2 soccer fields, a basketball court, exercise trail, a playground, and updated field lights. *This Keys Island Is Changing Right Before Our Eyes* (Miami Herald, November 27, 2016).

Boat Barn

The current Code disparately treats enclosed, four-sided boat storage racks and unenclosed, three-or-fewer sided boat storage racks with no meaningful distinction. The operational, concurrency, and environmental impacts are identical for enclosed boat racks as for three-sided, unenclosed boat racks. The text of the Amendment is consistent with the Code which encourages more sound, attractive, and practical development of boat storage racks.

The proposed Amendment is based on changed projections as to the needs of the public. As Monroe County braces itself to deal with the increasingly-evident impacts of climate change, an approach which considers and encourages best practices for storm readiness and hardening is necessary.

According to the U.S. National Climate Assessment Report, "Climate Change Impacts" (the "NCA Report"), produced by an advisory committee chartered under the Federal Advisory Committee Act, for the Subcommittee on Global Change Research and at the request of the U.S. Government, "[t]here has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s...[citations omitted] These include measures of intensity, frequency, and duration as well as the number of strongest (category 4 and 5) storms." See NCA Report, P. 41. A copy of the NCA Report is attached hereto and incorporated herein as Exhibit "B".

By providing for the SHCC Overlay District to accommodate enclosed boat rack structures, the Code will encourage storm-hardened and practical development of boat storage facilities. The recent wind-damage and water-damage impacts of Hurricane Irma and the projected increased intensity of Atlantic hurricanes mitigate for policies which encourage the protection of personal property (including boats) during storm events, and for investment by developers and port operators in infrastructure which provide peace of mind to visitors and tourists who may otherwise be wary to store boats in the Florida Keys for seasonal use as a result of hurricane impacts.

Furthermore, despite the best efforts of law enforcement, marine-related theft is on the rise in the Florida Keys. Pursuant to the June 21, 2017 Keynoter Article, "Marine Related Thefts on Rise Throughout the Florida Keys" (the "**Marine Theft Article**"), the theft of at least three (3) outboard engines, one (1) outboard lower unit, and three separate incidents of fishing gear theft from boats occurred over a ten-day span in June, 2017. A copy of the Marine Theft Article is attached hereto

Ms. Emily Schemper, Assistant Director
RE: Second Amendment to Proposed Text Amendment (File No.: 2018-169)
March 18, 2019
Page 21

and incorporated herein as **Exhibit "C"**. One need only pick up a local newspaper any given week to find reports of the increased prevalence of marine-related theft.

The permissible development of enclosed boat racks allows developers and port operators to provide an additional option for boat storage which provides increased security to both tourist and resident boat users. It is axiomatic that an enclosed, locked boat storage structure reduces the risk of marine-related (engine and engine parts, fishing equipment, electronic equipment) theft as compared to structures where boats are visible to the naked eye. While the Marine Theft Article provides simply that "[m]ost boat, motor, and fishing and diving equipment thefts can be easily prevented with minimum effort. At the end of the day, remove your gear from the boat and lock it up[.]" motors cannot be readily removed from boats and boats themselves are vulnerable to theft when stored anywhere other than enclosed storage under lock and key. The Amendment will encourage theft-deterrence in the marine sphere and allow port operators to more economically provide in-demand storage, explicitly furthering Goal 502 of the Comprehensive Plan that "[a]ll existing and future residents and visitors of Monroe County shall be served with ports in a manner that *maximizes safety, convenience, economic benefit*, environmental compatibility and consistency with other elements of the comprehensive plan." (*emphasis added*).

No Adverse Community Change

There will be no adverse change to unincorporated Monroe County at large if the Amendment is approved. As discussed herein, there are no increased concurrency, environmental, or practical impacts associated with implementation of the SHCC Overlay District. All such development will be required to comply with level of service, concurrency, and performance standards as set forth in the Code. Moreover, it allows for infill at or near the primary employment center of Key West and Stock Island while keeping density outside the more rural lower Florida Keys.

Conclusion

Based on the foregoing, Applicant requests consideration and adoption of the Amendment. Thank you for your consideration and assistance, and please feel free to contact me with any questions.

Sincerely,



Barton W. Smith

BWS/bg

Enclosures

Ms. Emily Schemper, Assistant Director
RE: Second Amendment to Proposed Text Amendment (File No.: 2018-169)
March 18, 2019
Page 22

Exhibit "A"

Monroe County Land Use Map Dated January 19, 1988

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Assistant Director
RE: Second Amendment to Proposed Text Amendment (File No.: 2018-169)
March 18, 2019
Page 23

Exhibit "B"

NCA Report

PREVIOUSLY PROVIDED

Ms. Emily Schemper, Assistant Director
RE: Second Amendment to Proposed Text Amendment (File No.: 2018-169)
March 18, 2019
Page 24

Exhibit "C"

Marine Theft Article

PREVIOUSLY PROVIDED

End of Additional File 2018-169