



UPDATED PROJECTIONS OF SEA LEVEL RISE



FOR THE TAMPA BAY REGION

Tampa Bay Climate Science Advisory Panel

UF/IFAS Extension, Florida Sea Grant (convener)

- Ad Hoc Membership
 - Regional Agencies
 - Federal Agencies
 - Local Government Partners
 - Universities
 - Private Sector



OBJECTIVE

To provide scientific support to local governments planning for a changing climate.

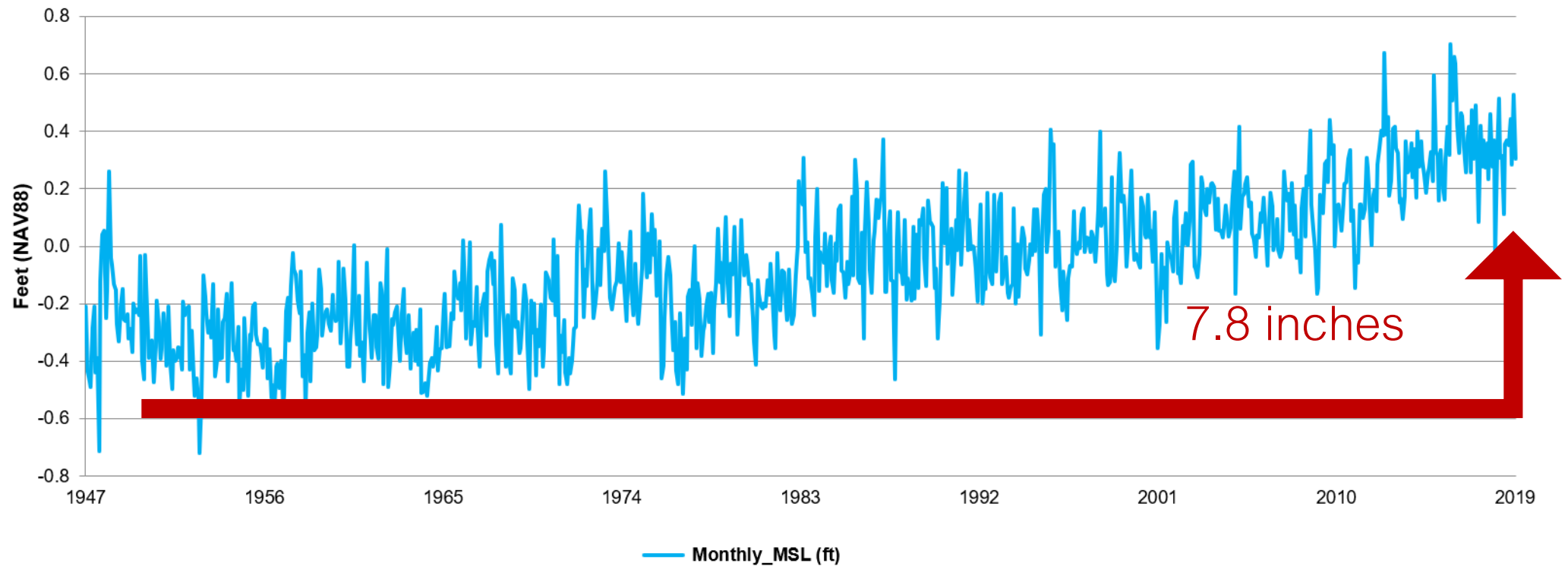
**RECOMMENDED PROJECTIONS OF
SEA LEVEL RISE IN THE TAMPA BAY REGION**

Tampa Bay Climate Science Advisory Panel

Updated April 2019

1. Sea Levels Are Already Rising

Monthly Mean Sea Level MSL (ft)
St. Petersburg, Florida

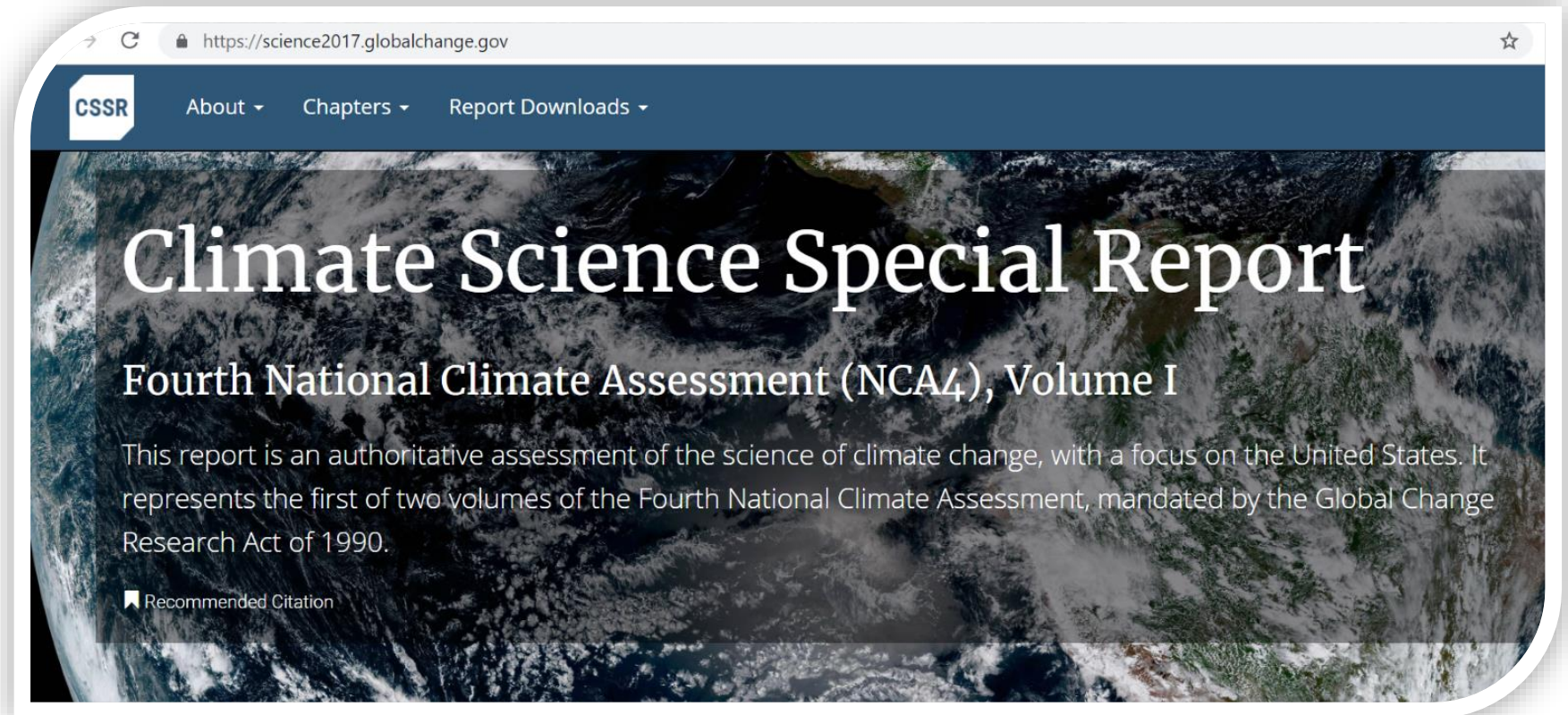


2. Regionally Corrected

- St. Petersburg Gauge
 - Pasco, Pinellas,
Hillsborough, Manatee,
Sarasota
- Cedar Key Gauge
 - Citrus, Hernando

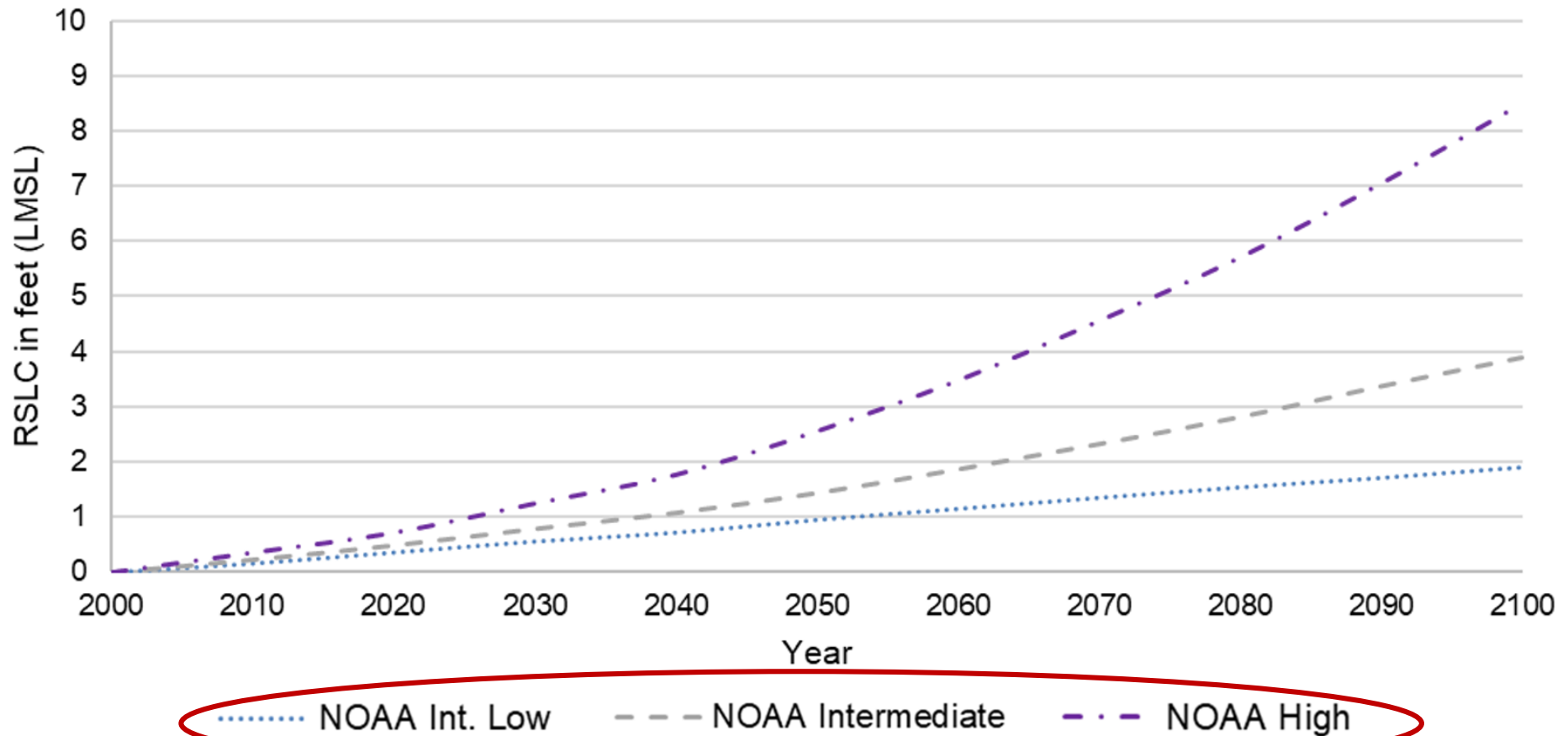


3. Consistent With National Climate Assessment

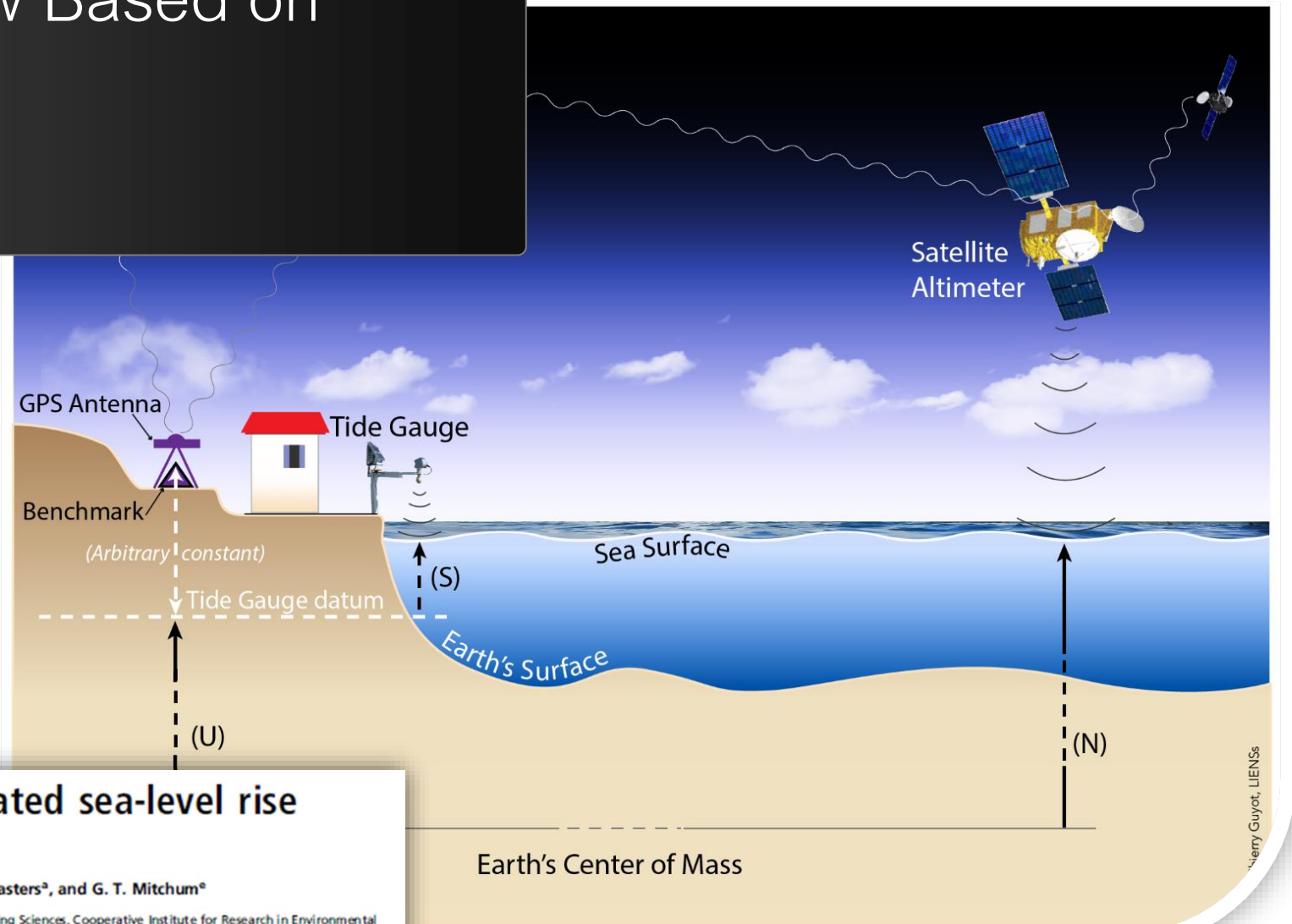


3 Curves Recommended

Relative Sea Level Change Projections -
Gauge 8726520, St. Petersburg, FL



Exclude NOAA Low Based on Observed Data



Climate-change-driven accelerated sea-level rise detected in the altimeter era

R. S. Nerem^{a,1}, B. D. Beckley^b, J. T. Fasullo^c, B. D. Hamlington^d, D. Masters^e, and G. T. Mitchum^e

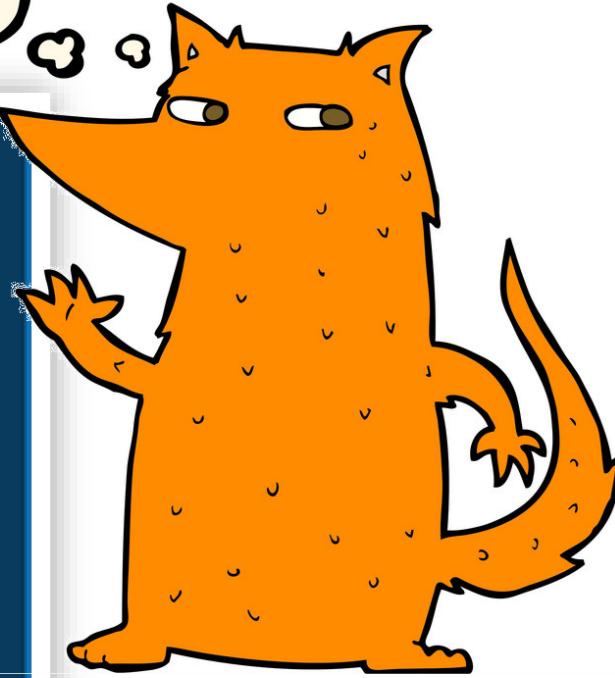
^aColorado Center for Astrodynamic Research, Ann and H. J. Smead Aerospace Engineering Sciences, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO 80309; ^bStinger Ghaffarian Technologies Inc., NASA Goddard Space Flight Center, Greenbelt, MD 20771; ^cNational Center for Atmospheric Research, Boulder, CO 80305; ^dOld Dominion University, Norfolk, VA 23529; and ^eCollege of Marine Science, University of South Florida, St. Petersburg, FL 33701

Edited by Anny Cazenave, Centre National d'Etudes Spatiales, Toulouse, France, and approved January 9, 2018 (received for review October 2, 2017)

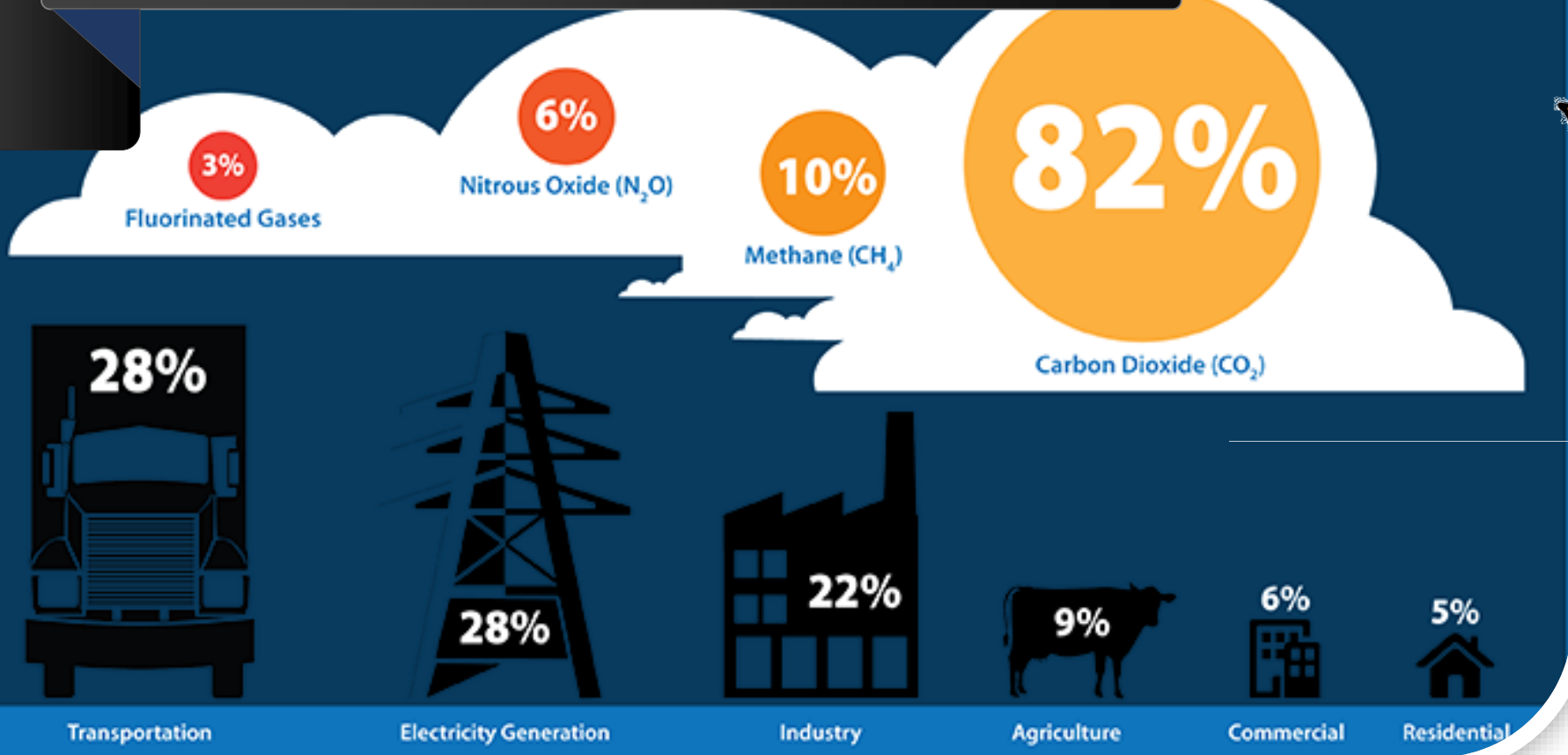
Likelihood Based on "Business As Usual"

GHG Emissions

What on earth is an RCP?!?



Total U.S. Greenhouse Gas Emissions by Economic Sector in 2016



Updated Projections are 1 to 1.5 Feet Higher

Original Recommendation

Year	NOAA Low (Feet)	NOAA Int Low (Feet)	NOAA Int High (Feet)	NOAA High (Feet)
1992 ¹³	0.00	0.00	0.00	0.00
2025	0.28	0.38	0.60	0.84
2035	0.37	0.53	0.90	1.31
2050	0.50	0.80	1.46	2.22
2065	0.63	1.10	2.15	3.35
2075	0.71	1.33	2.68	4.23
2100	0.93	1.97	4.26	6.89



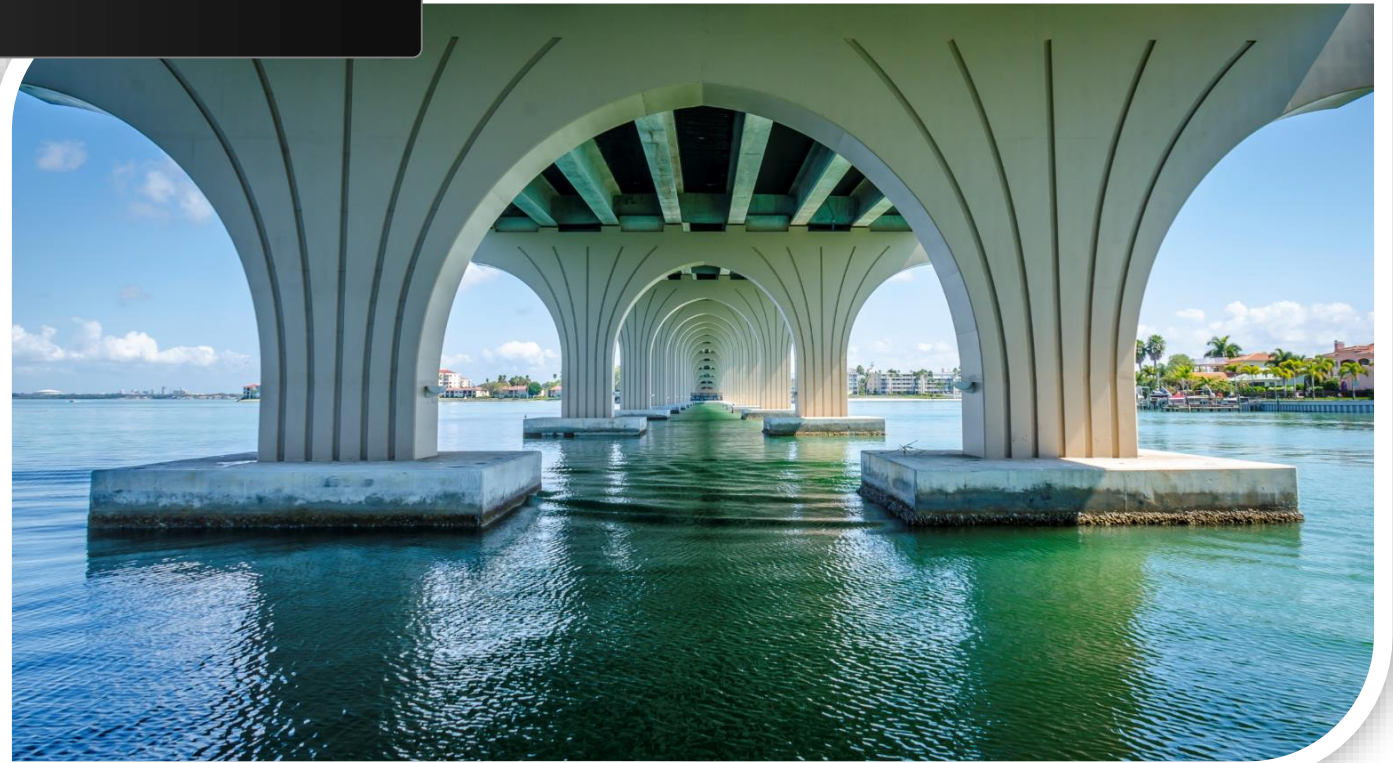
Updated Recommendation

Year	NOAA Int-Low (feet)	NOAA Intermediate (feet)	NOAA High (feet)
2000 ³	0	0	0
2030	0.56	0.79	1.25
2040	0.72	1.08	1.77
2050	0.95	1.44	2.56
2060	1.15	1.87	3.48
2070	1.35	2.33	4.56
2080	1.54	2.82	5.71
2090	1.71	3.38	7.05
2100	1.90	3.90	8.50

Table 1. Sea Level Change Relative to the Year 2000 for St. Petersburg, Florida in Feet Above Local Mean Sea Level (LMSL)

4. Scenario-Based Adaptation Approach

- Location
- Project Life Cycle
- Risk Tolerance
- Cost
- Criticality of Function





Discussion?

-  Libby Carnahan
-  727.4536522
-  lcarnahan@ufl.edu
-  @PinellaSeaGrant